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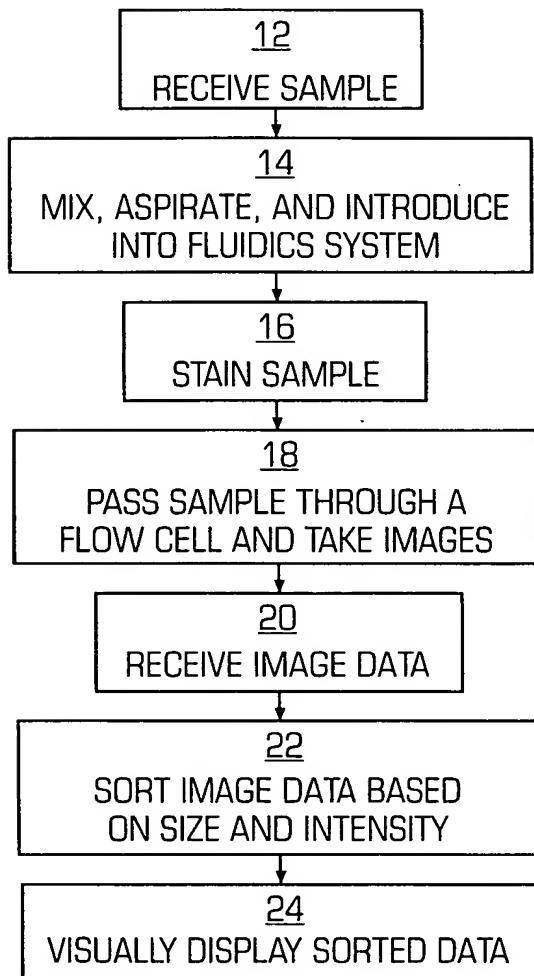


FIG. 1

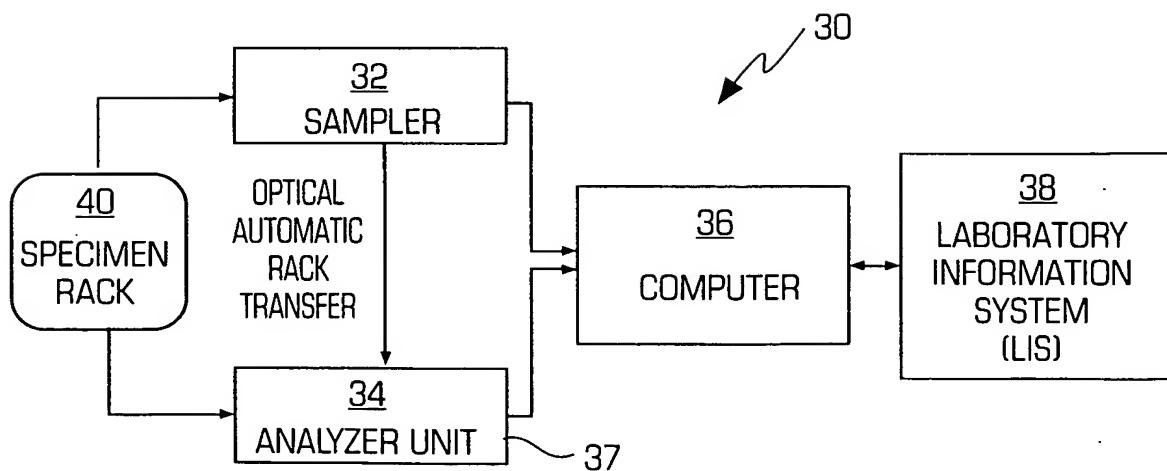


FIG. 2

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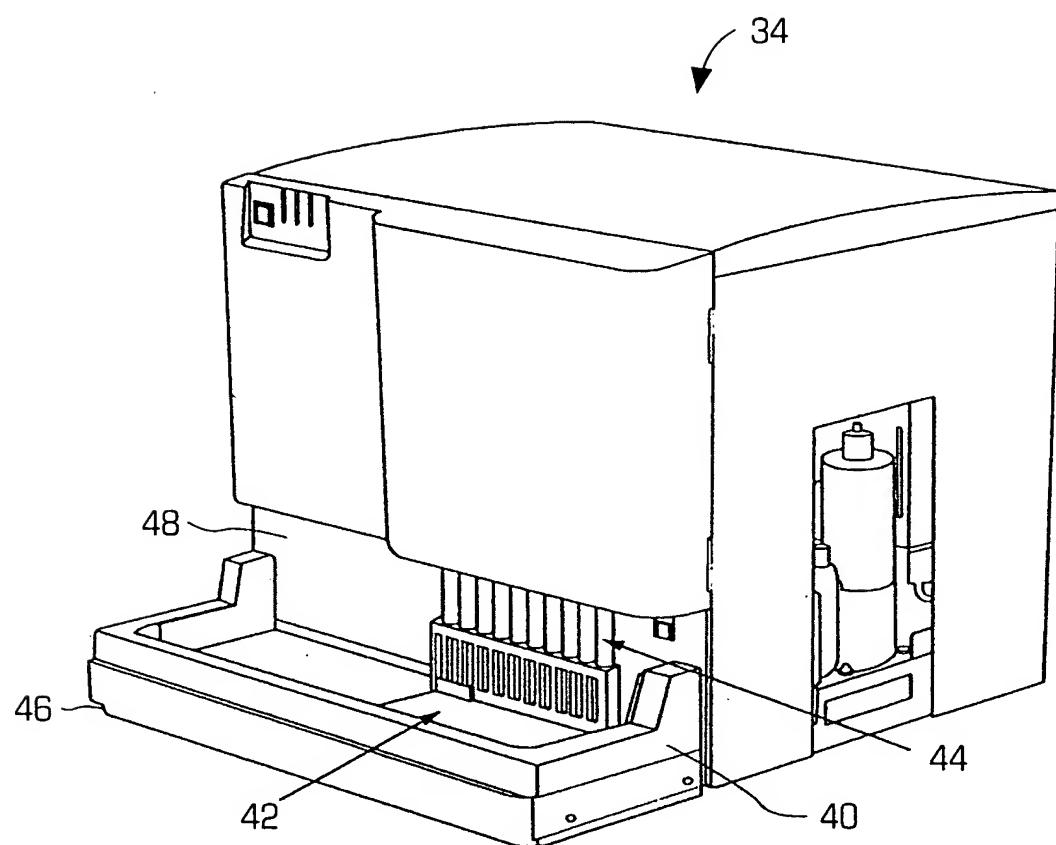


FIG. 3

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FIG. 4A

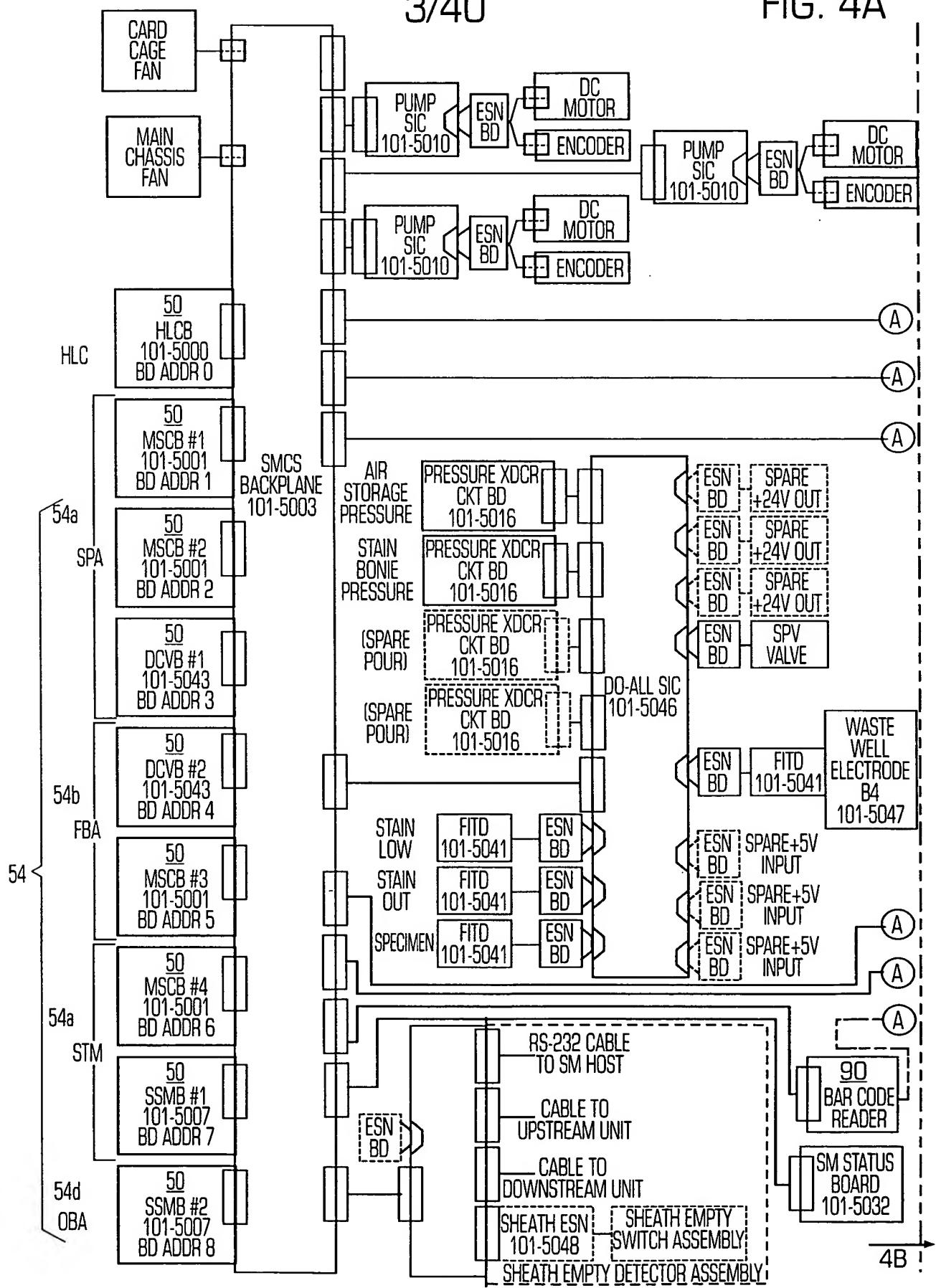
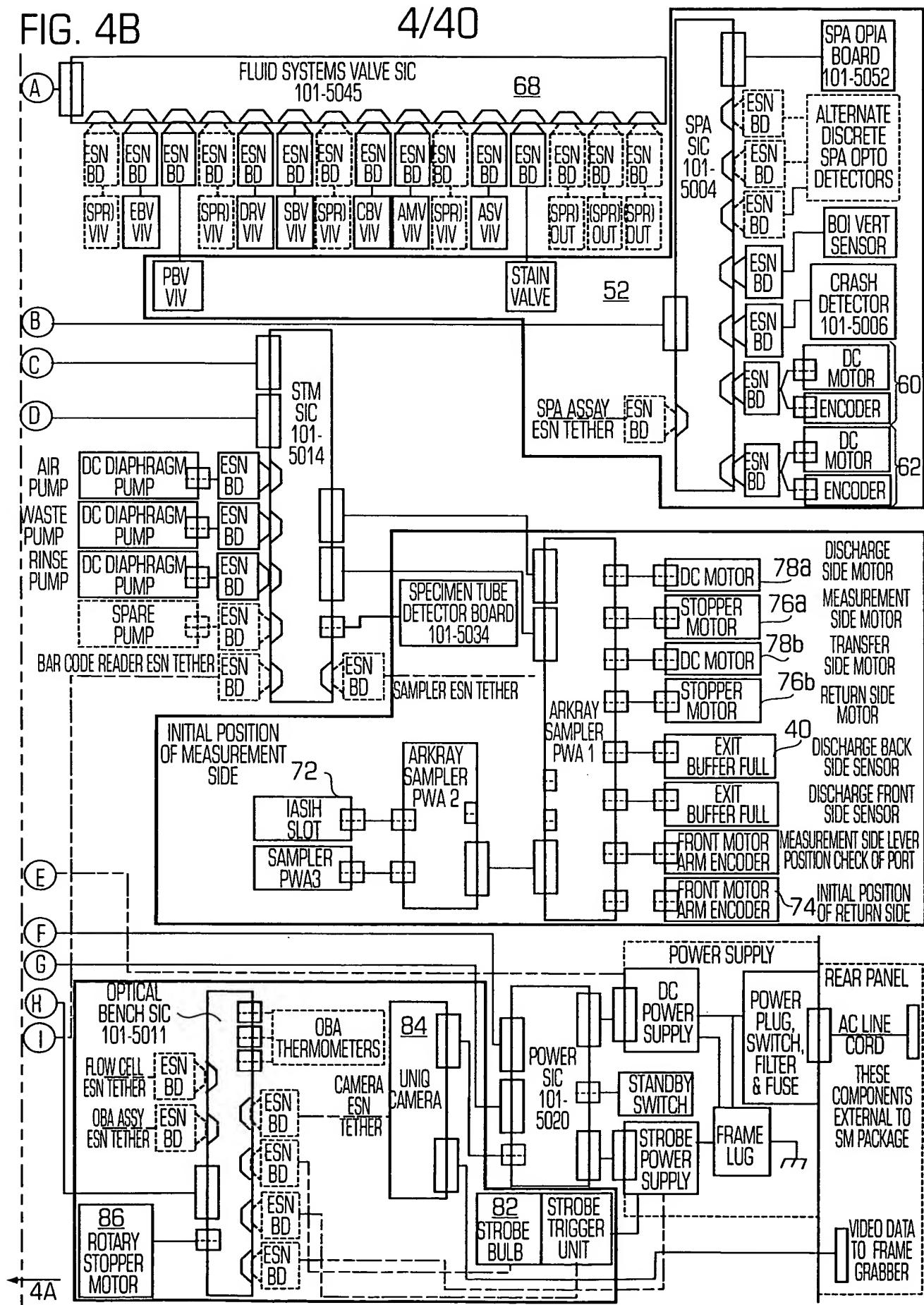
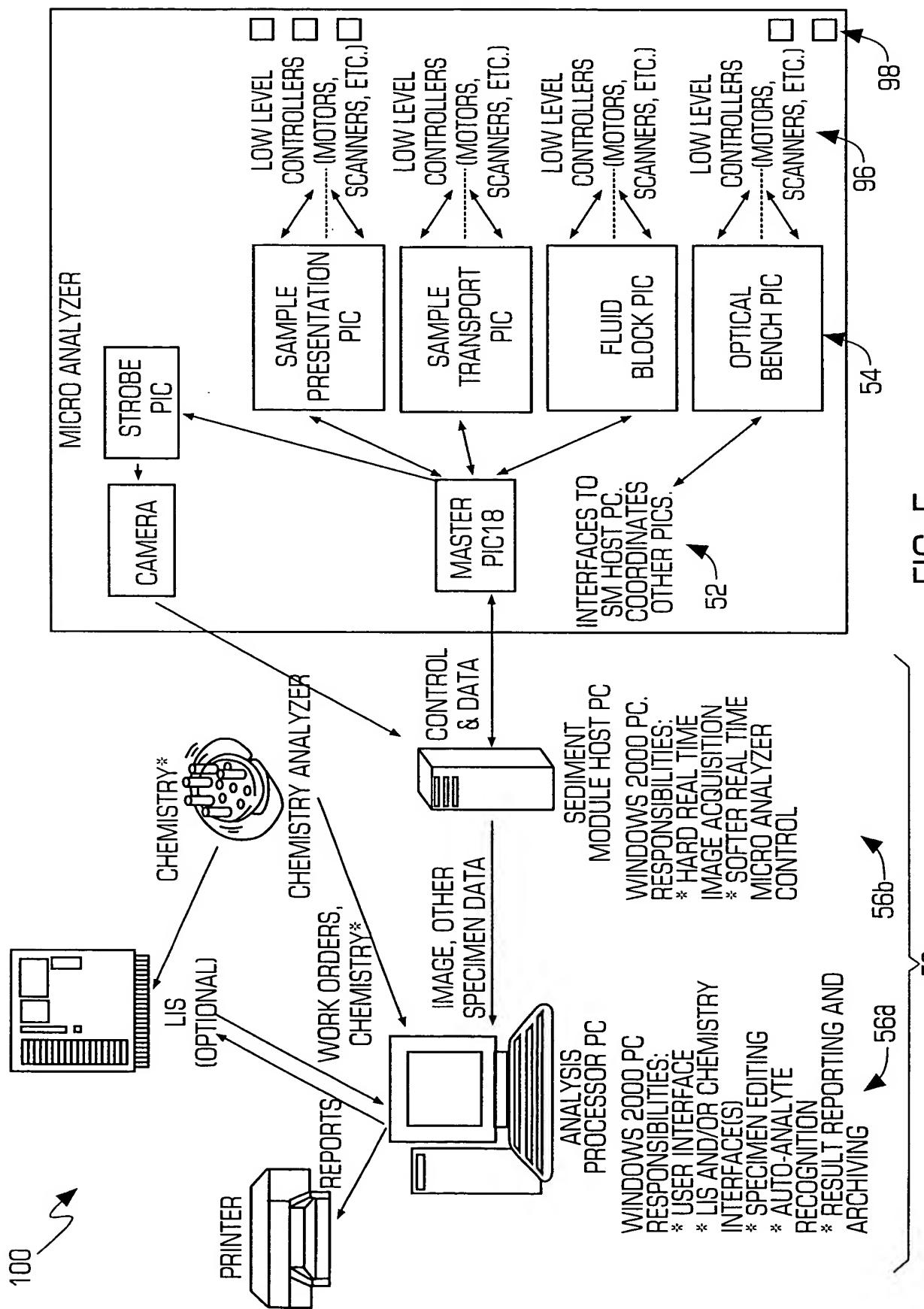


FIG. 4B

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600 602 604 606

L1	L2	BEGIN	END	COMMENT
R	H	1	14	RESET THIRD LEVEL CONTROLLERS
1	6	15	99	RESUME RUNNING RACKS
G	O	18	99	RUN RACKS UNDER HOST CONTROL
S	S	395	434	SERVICE SPECIMEN (RUN TUBES W/O HOST PC)
O	E	100	103	CLEAR RACK
R	Q	104	148	RUN QC CONTROL
1	7	149	336	RUN AUTOFOCUS CONTROL
W	8	335	349	WAIT FOR COMMAND, BUTTON, RACK OR TIMEOUT
Z	Z	393	394	SLEEP
P	I	350	366	IRISOLVE CLEAN
W	S	435	439	SHORT WAKEUP
W	M	440	444	MEDIUM WAKEUP
W	L	445	449	LONG WAKEUP
S	D	450	453	SHUTDOWN
W	A	350	392	WASH WITH BLEACH
D	L	454	481	RUN DILUENT
K	L	482	485	KILL (WAIT FOR POWER OFF)
B	X	486	487	BACKGROUND EXIT ERROR

FIG. 6

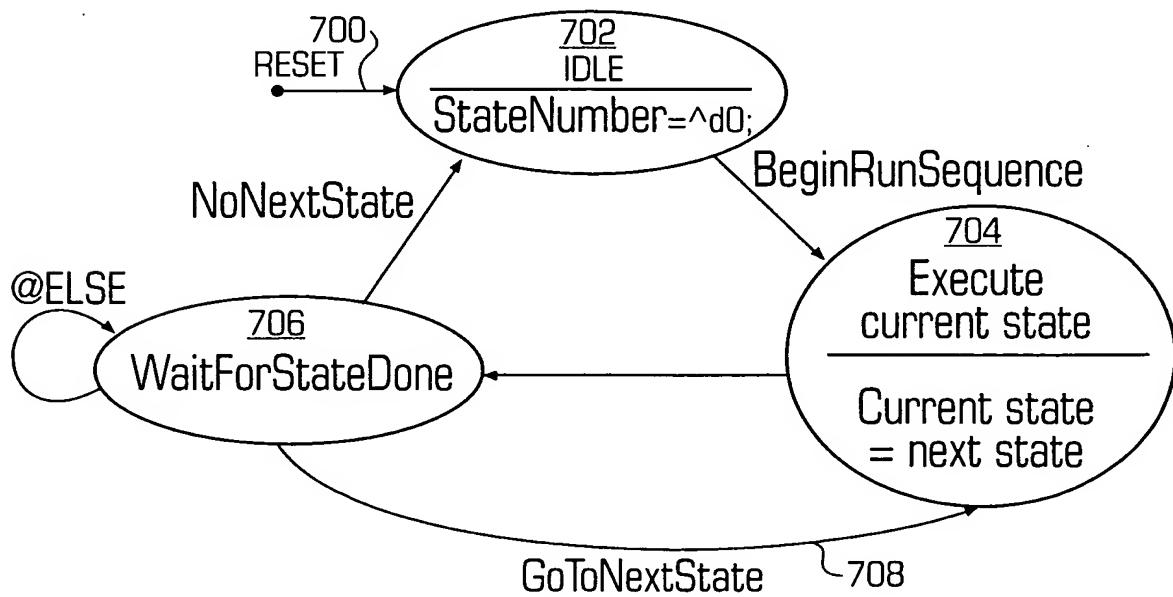


FIG. 7

FIG. 8A1

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STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STIMSTAT	OBASTAT
0		0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
1	RESET HIGH	RE	RE	RE	RE	0XFF	0XFF	0XFF	0XFF
2	START SHEATH BOTTLE FILL	S1	0X0000	0X0000	0X0000	0X32	0X00	0X00	0X00
3	WAIT FOR S1 IDLE AND SHEATH BOTTLE FULL, OR TIMEOUT	0X0000	0X0000	0X0000	0X0000	0XFF	0X00	0X00	0X00
4	TURN OFF SHEATH PUMP	S0	0X0000	0X0000	0X0000	0X33	0X00	0X00	0X00
5	WAIT FOR S0 IDLE	0X0000	0X0000	0X0000	0X0000	0XFF	0X00	0X00	0X00
6	TEST SHEATH LOW SENSE CONDITION	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
7	SHEATH SENSE IS OK, SEND MESSAGE TOSM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
8	TEST SHEATH EMPTY SENSE CONDITION	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
9	SHEATH SENSE IS LOW, SEND MESSAGE TOSM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
10	SHEATH SENSE IS EMPTY, SEND MESSAGE TOSM, BRANCH TO "CLEAR RACK"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
11	START 3 FUNCS: PH, CR, HS	PH	HS	CR	0X0000	0X00	0X21	0X00	0X00
12	WAIT FOR SPA	0X0000	0X0000	0X0000	0X0000	0XFF	0X00	0X00	0X00
13	WAIT FOR STM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0XF	0X00
14	END RH	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
15	BEGINNING OF GO RESUME (16); SET FRONT PANEL LIGHTS (BUTTON GREEN, LED BLUE)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
16	RE-READ THE BARCODE	0X0000	0X0000	BC	0X0000	0X00	0X00	0x44	0X00
17	BRANCH TO "RETRIEVE TUBE NUMBER"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
18	BEGINNING OF GO COMMAND; ASK SM IF WE CAN START	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
19	WAIT FOR SM REPLY, WHOSE ARGUMENT INDICATES WHETHER TO PROCEED	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
20	IF SM REPLIES '00' BRANCH TO CANNOT_GO; ELSE FALL THROUGH	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
21	RESET HLCS	RE	RE	RE	RE	0XFF	0XFF	0XFF	0XFF
22	MAKE SURE OUTPUT IS CLEAR (STM:IC RETURNS 'T' OR 'F')	0X0000	0X0000	IC	0X0000	0X00	0X00	0X00	0X00
23	GOT 'T'? IF SO, BRANCH TO SETFRONTPANELLIGHTS1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0x54	0X00
24	GOT 'F'? IF SO, BRANCH TO CANNOT_GO	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0x46	0X00
25	LOOP BACK TO LOOKINGFORT1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
26	SET FRONT PANEL LIGHTS (BUTTON GREEN, LED BLUE)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0XFF	0X00
27	START SHEATH BOTTLE FILL	S1	0X0000	0X0000	0X0000	0X32	0X00	0X00	0X00
28	WAIT FOR S1 IDLE AND SHEATH BOTTLE FULL, OR TIMEOUT	0X0000	0X0000	0X0000	0X0000	0XFF	0X00	0X00	0X00
29	TURN OFF SHEATH PUMP	S0	0X0000	0X0000	0X0000	0X33	0X00	0X00	0X00
30	WAIT FOR S0 IDLE	0X0000	0X0000	0X0000	0X0000	0XFF	0X00	0X00	0X00
31	TEST SHEATH LOW SENSE CONDITION	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
32	SHEATH SENSE IS OK, SEND MESSAGE TOSM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
33	TEST SHEATH EMPTY SENSE CONDITION	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
34	SHEATH SENSE IS LOW, SEND MESSAGE TOSM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
35	SHEATH SENSE IS EMPTY, SEND MESSAGE TOSM, BRANCH TO "CLEAR RACK"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
36	TELL STM TO FIND RACK, HC TO SET CP AND SP AT STARTING POSITION.	PH	HC	M1	0X0000	0X00	0X00	0X00	0X00
37	IF 31 FROM STM GOTO WAITUNTILSTMATIDLE1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X31	0X00
38	NO RACK -- ENDGOBRANCH	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X39	0X00
39	LOOP BACK	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
40	WAITUNTILSTMATIDLE1 (WAIT FOR SPA IDLE AS WELL)	0X0000	0X0000	0X0000	0X0000	0XFF	0XFF	0XFF	0X00
41	MOVE TO NEXT TUBE POSITION (FIRST TUBE ASPIRATE POSITION)	0X0000	0X0000	MN	0X0000	0X00	0X00	0X32	0X00
42	RETRIEVE TUBE NUMBER, TELL HOST WE'RE ALIVE; BRANCH TO END RACK IF 11 (0X0B), TERM OTHERWISE	0X0000	0X0000	0X0708	0X0000	0X00	0X00	0x0B	0X00
43	RETRIEVE STORED TUBE DETECT VALUE; BRANCH TO "MOVE TO NEXT TUBE..." IF 0	0X0000	0X0000	0X070A	0X0000	0X00	0X00	0x00	0X00
44	RETRIEVE RACK ID; BRANCH TO "RQ" IF 29	0X0000	0X0000	0X0709	0X0000	0X00	0X00	0x1D	0X00
45	RETRIEVE TUBE ID (BAR CODE)	0X0000	0X0000	0X0707	0X0000	0X00	0X00	0X00	0X00
46	GET SAMPLE INFO FROM HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
47	IF SM REPLIES '00', BRANCH TO "MOVE TO NEXT TUBE..."	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00

300

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FIG. 8A2

310 312 314 316 318 320 322 324 326 328 330

SMTST	TOSM	TVALUE	TFUNC	SENS	STST	SMSK	END	BRAN	DEST	TRANSLATED PARAMETERS
0x0000	0	0x0007	0x43	0x0032	0x01	0x03	0x0000	0x0101	0x5738	0x01, 0x03, 0x0000, 0x0101, 0x5738},
0x0000	0	0x0008	0x44	0x0000	0x00	0x00	0xce4e	0x0000	0x0000	0x00, 0x00, 0xce4e, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0005	0x42	0x0033	0x01	0x01	0x8303	0x0000	0x0000	0x01, 0x01, 0x8303, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0032	0x00	0x80	0x8001	0x0001	8	0x00, 0x80, 0x8001, 0x0001, 8},
0x0000	0x1f	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	11	0x00, 0x00, 0x0000, 0x0101, 11},
0x0000	0	0x0000	0x00	0x0032	0x00	0x40	0x8001	0x0001	10	0x00, 0x40, 0x8001, 0x0001, 10},
0x0000	0x20	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	11	0x00, 0x00, 0x0000, 0x0101, 11},
0x0000	0x21	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	0x3045	0x00, 0x00, 0x0000, 0x0101, 0x3045},
0x0000	0	0x0009	0x44	0x0000	0x00	0x00	0x005f	0x0000	0x0000	0x00, 0x00, 0x005f, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001f	0x0000	0x0000	0x00, 0x00, 0x001f, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001f	0x0000	0x0000	0x00, 0x00, 0x001f, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x6000	0x09	0x00	0x0101	0x0000	0x0000	0x09, 0x00, 0x0101, 0x0000, 0x0000},
0x0000	0	0x000e	0x44	0x0000	0x00	0x00	0x001f	0x0000	0x0000	0x00, 0x00, 0x001f, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	42	0x00, 0x00, 0x0000, 0x0101, 42},
0x0000	0x82	0x0000	0x00	0x6001	0x11	0x00	0x0101	0x0000	0x0000	0x11, 0x00, 0x0101, 0x0000, 0x0000},
0x3044	0	0x000f	0x44	0x6001	0x11	0x00	0x001f	0x0000	0x0000	0x11, 0x00, 0x001f, 0x0000, 0x0000},
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	98	0x00, 0x00, 0x0101, 0x0020, 98},
0x0000	0	0x0010	0x44	0x6000	0x11	0x00	0xca4a	0x0000	0x0000	0x11, 0x00, 0xca4a, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0008	26	0x00, 0x00, 0x0101, 0x0008, 26},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0008	98	0x00, 0x00, 0x0101, 0x0008, 98},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	23	0x00, 0x00, 0x0000, 0x0101, 23},
0x0000	0	0x0000	0x00	0x6000	0x09	0x00	0x005f	0x0000	0x0000	0x09, 0x00, 0x005f, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0005	0x42	0x0033	0x01	0x01	0x8303	0x0000	0x0000	0x01, 0x01, 0x8303, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0032	0x00	0x80	0x8001	0x0001	33	0x00, 0x80, 0x8001, 0x0001, 33},
0x0000	0x1f	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	36	0x00, 0x00, 0x0000, 0x0101, 36},
0x0000	0	0x0000	0x00	0x0032	0x00	0x40	0x8001	0x0001	35	0x00, 0x40, 0x8001, 0x0001, 35},
0x0000	0x20	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	36	0x00, 0x00, 0x0000, 0x0101, 36},
0x0000	0x21	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	0x3045	0x00, 0x00, 0x0000, 0x0101, 0x3045},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0008	40	0x00, 0x00, 0x0101, 0x0008, 40},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0008	94	0x00, 0x00, 0x0101, 0x0008, 94},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001f	0x0101	37	0x00, 0x00, 0x001f, 0x0101, 37},
0x0000	0	0x0011	0x44	0x0000	0x00	0x00	0x8f0e	0x0000	0x0000	0x00, 0x00, 0x8f0e, 0x0000, 0x0000},
0x0000	0x36	0x0012	0x44	0x0000	0x00	0x00	0x001f	0x0000	0x0000	0x00, 0x00, 0x001f, 0x0000, 0x0000},
0x0000	0x32	0x0013	0x44	0x0000	0x00	0x00	0x0101	0x0008	81	0x00, 0x00, 0x0101, 0x0008, 81},
0x0000	0	0x0014	0x44	0x0000	0x00	0x00	0x0101	0x0008	41	0x00, 0x00, 0x0101, 0x0008, 41},
0x0000	0	0x0015	0x44	0x0000	0x00	0x00	0x0101	0x0008	0x5251	0x00, 0x00, 0x0101, 0x0008, 0x5251},
0x0000	0	0x0016	0x44	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x3032	0x81	0x0017	0x44	0x0000	0x00	0x00	0x001f	0x0000	0x0000	0x00, 0x00, 0x001f, 0x0000, 0x0000},
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	41	0x00, 0x00, 0x0101, 0x0020, 41},

8A1

8B2

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMRD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
48	IF SM REPLIES '-2', BRANCH TO "0E" (CLEAR RACK)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
49	TO TEST TUBE (INITIALIZE EP PUMP)	TT	0X0000	0X0000	0X0000	0X11	0X00	0X00	0X00
50	WAIT FOR TT COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
51	WAIT FOR "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
52	START SHEATH FOR BACKGROUND CAPTURE	SB	0X0000	0X0000	0X0000	0X31	0X00	0X00	0X00
53	WAIT FOR SB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
54	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
55	CAPTURE BACKGROUND AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE) OR SHORT SAMPLE DETECTOR.	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
56	SEND "SHORT SAMPLE" SIGNAL AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE). IF EXCEEDS 10 SECS - GOTO BX.	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
57	TURN OFF EP PUMP ON SPA	EB	0X0000	0X0000	0X0000	0X34	0X00	0X00	0X00
58	WAIT FOR EB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
59	MOVE PIPETTE DOWN TO ASPIRATE POSITION IN TEST TUBE	TD	0X0000	0X0000	0X0000	0X13	0X00	0X00	0X00
60	WAIT FOR TD COMPLETE AND "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
61	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0X0000	0X0000	0X17	0X00	0X00	0X00
62	WAIT FOR AS AND RC COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
63	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
64	CAPTURE SAMPLE FRAMES AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE OR SHORT SAMPLE DETECTOR.	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
65	SEND "SHORT SAMPLE" SIGNAL AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
66	TURN OFF EP PUMP ON SPA, SP PUMP ON FBA	FB	FB	0X0000	0X0000	0X34	0X00	0X00	0X00
67	WAIT FOR FB'S COMPLETE (SPA AND FBA)	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
68	TO WASTE WELL	TW	DB	0X0000	0X0000	0X15	0X00	0X00	0X00
69		0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
70		0X0000	0X0000	0X0000	0X0000	0X00	0xFF	0X00	0X00
71	TEST SHEATH FULL SENSOR	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
72	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0X0000	0X0000	0X00	0X25	0X00	0X00
73	TURN ON RINSE PUMP AND RINSE PIPETTER	TQ	RP	0X0000	0X0000	0X00	0X25	0X00	0X00
74		0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
75		0X0000	0X0000	0X0000	0X0000	0X00	0xFF	0X00	0X00
76	CLEAR PIPETTER/HOME CP AND SP/MOVE TO NEXT TUBE	CP	HC	MN	0X0000	0X16	0X00	0X00	0X00
77		0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
78		0X0000	0X0000	0X0000	0X0000	0X00	0xFF	0X00	0X00
79		0X0000	0X0000	0X0000	0X0000	0X00	0X00	0xFF	0X00
80	SEND COMPLETION SIGNAL TO HOST, BRANCH TO "RETRIEVE TUBE NUMBER"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
81	END RACK BRANCH TARGET	0X0000	0X0000	0X0000	0X0000	0X00	0xFF	0X00	0X00
82		0X0000	0X0000	0X0000	0X0000	0X00	0X00	0xFF	0X00
83	EJECT RACK	0X0000	0X0000	ER	0X0000	0X00	0X00	0X33	0X00
84	LOOP TO PH1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
85	START SHEATH BOTTLE FILL	S1	0X0000	0X0000	0X0000	0X32	0X00	0X00	0X00
86	WAIT FOR S1 IDLE AND SHEATH BOTTLE FULL, OR TIMEOUT	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
87	TURN OFF SHEATH PUMP	S0	0X0000	0X0000	0X0000	0X33	0X00	0X00	0X00
88	WAIT FOR S0 IDLE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
89	TEST SHEATH LOW SENSE CONDITION	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
90	SHEATH SENSE IS OK, SEND MESSAGE TOSM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
91	TEST SHEATH EMPTY SENSE CONDITION	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
92	SHEATH SENSE IS LOW, SEND MESSAGE TOSM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
93	SENSE SHEATH IS EMPTY, SEND MESSAGE TOSM, BRANCH TO "CLEAR RACK"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
94	SET SP AND CP AT PINCHED STANDBY POSITION, ENDGOBRANCHTARGET:MAKE SURF SPA AND STM IDLE	0X0000	HS	0X0000	0X0000	0xFF	0X21	0xFF	0X00
95	BRANCH TO END OF GO SEQUENCE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
96	SUBR: MOVE NEXT	0X0000	0X0000	MN	0X0000	0X00	0X00	0X32	0X00

SMTST	TOSM	TVALUE	TFUNC	SENS	STST	SMSK	END	BRAN	DEST	TRANSLATED PARAMETERS
0x2D32	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	0x3045	0x00, 0x00, 0x0101, 0x0020, 0x3045},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x3338	0x37	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0018	0x42	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x3034	0x83	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	57	0x00, 0x02, 0x0001, 0x0010, 57},
0x3034	0x31	0x0019	0x43	0x0000	0x00	0x00	0x0010	0x0000	0x4258	0x00, 0x00, 0x0010, 0x0000, 0x4258},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x3338	0x37	0x0000	0x00	0x0000	0x00	0x00	0x9212	0x0000	0x0000	0x00, 0x00, 0x9212, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x8606	0x0000	0x0000	0x00, 0x00, 0x8606, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x3036	0x85	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	66	0x00, 0x02, 0x0001, 0x0010, 66},
0x3036	0x31	0x0063	0x43	0x0000	0x00	0x00	0x0010	0x0000	0x4258	0x00, 0x00, 0x0010, 0x0000, 0x4258},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x8606	0x0000	0x0000	0x00, 0x00, 0x8606, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0033	0x01	0x01	0x0101	0x0001	73	0x01, 0x01, 0x0101, 0x0001, 73},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x001F	74	0x00, 0x00, 0x0000, 0x001F, 74},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0x36	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0101	42	0x00, 0x00, 0x001F, 0x0101, 42},
0x0000	0x2F	0x001B	0x44	0x0000	0x00	0x00	0x0004	0x0000	0x0000	0x00, 0x00, 0x0004, 0x0000, 0x0000},
0x0000	0	0x001C	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x001D	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	27	0x00, 0x00, 0x0000, 0x0101, 27},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0005	0x42	0x0033	0x01	0x01	0x8303	0x0000	0x0000	0x01, 0x01, 0x8303, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0002	0x0000	0x0000	0x00, 0x00, 0x0002, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0032	0x80	91	0x00, 0x80, 0x8001, 0x0001, 91},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	94	0x00, 0x00, 0x0000, 0x0101, 94},
0x0000	0	0x0000	0x00	0x0032	0x00	0x40	0x8001	0x0001	93	0x00, 0x40, 0x8001, 0x0001, 93},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	94	0x00, 0x00, 0x0000, 0x0101, 94},
0x0000	0x21	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	0x3045	0x00, 0x00, 0x0000, 0x0101, 0x3045},
0x0000	0	0x001F	0x44	0x0000	0x00	0x00	0x8E0E	0x0000	0x0000	0x00, 0x00, 0x8E0E, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	99	0x00, 0x00, 0x0000, 0x0101, 99},
0x0000	0x36	0x001F	0x44	0x0000	0x00	0x00	0x0001F	0x0000	0x0000	0x00, 0x00, 0x0001F, 0x0000, 0x0000},

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
97	END SUBR: BRANCH TO WAITUNTILSTMATIDLE1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
98	COULDN'T GO: FLASH RED BUTTON FOR 5 SECONDS	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
99	END OF GO SEQUENCE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
100	BEGIN OF "OE" (CLEAR RACKS): FULL STOP	RF	RF	RF	0X0000	0xFF	0xFF	0xFF	0X00
101	SEND CR TO STM; HOME PIPETTER	PH	0X0000	CR	0X0000	0X00	0X00	0X33	0X00
102	HOME STM CARRIERS	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0xFF	0X00
103	END OF "OE" (CLEAR RACKS)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
104	BEGIN OF "RQ" (RUN QC CONTROL)	RF	RF	RF	0X0000	0xFF	0xFF	0xFF	0X00
105	RETRIEVE TUBE NUMBER; BRANCH TO WASH ("WA") IF 1 (0X01), TERM OTHERWISE	0X0000	0X0000	0X0708	0X0000	0X00	0X00	0x01	0X00
106	RETRIEVE TUBE NUMBER; BRANCH TO DILUENT ("DL") IF 2 (0X02), TERM OTHERWISE	0X0000	0X0000	0X0708	0X0000	0X00	0X00	0x02	0X00
107	RETRIEVE TUBE NUMBER; BRANCH TO DILUENT ("DL") IF 3 (0X03), TERM OTHERWISE	0X0000	0X0000	0X0708	0X0000	0X00	0X00	0x03	0X00
108	RETRIEVE TUBE NUMBER; BRANCH TO AUTOFOCUS ("17") IF 5 (0X05), TERM OTHERWISE	0X0000	0X0000	0X0708	0X0000	0X00	0X00	0x05	0X00
109	RETRIEVE TUBE NUMBER; BRANCH TO DILUENT ("DL") IF 10	0X0000	0X0000	0X0708	0X0000	0X00	0X00	0x0A	0X00
110	RETRIEVE TUBE ID (BAR CODE)	0X0000	0X0000	0X0707	0X0000	0X00	0X00	0X00	0X00
111	GET SAMPLE INFO FROM HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
112	IF SM REPLIES '00', BRANCH TO "MOVE TO NEXT CONTROL TUBE POSITION"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
113	IF SM REPLIES '-2', BRANCH TO "OE" (CLEAR RACK)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
114	TO TEST TUBE	TT	0X0000	0X0000	0X0000	0x11	0x00	0X00	0X00
115		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
116	WAIT FOR "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
117	START SHEATH FOR BACKGROUND CAPTURE	SB	0X0000	0X0000	0X0000	0x31	0x00	0X00	0X00
118	WAIT FOR SB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
119	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
120	CAPTURE BACKGROUND AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE) OR SHORT SAMPLE DETECTOR.	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
121	SEND "SHORT SAMPLE" SIGNAL AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE). IF EXCEEDS 10 SECS - GOTO BX.	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
122	TURN OFF EP PUMP ON SPA	EB	0X0000	0X0000	0X0000	0x34	0x00	0X00	0X00
123	WAIT FOR EB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
124	MOVE PIPETTE DOWN TO ASPIRATE POSITION IN TEST TUBE	TD	0X0000	0X0000	0X0000	0x13	0x00	0X00	0X00
125	WAIT FOR TD COMPLETE AND "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
126	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0X0000	0X0000	0x17	0x00	0X00	0X00
127	WAIT FOR AS AND RC COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
128	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
129	CAPTURE SAMPLE FRAMES AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE OR SHORT SAMPLE DETECTOR.	0X0000	0X0000	0X0000	0X0000	0x00	0X00	0X00	0X00
130	SEND "SHORT SAMPLE" SIGNAL AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE	0X0000	0X0000	0X0000	0X0000	0x00	0X00	0X00	0X00
131	TURN OFF EP PUMP ON SPA, SP PUMP ON FBA	EB	EB	0X0000	0X0000	0x34	0x00	0X00	0X00
132	WAIT FOR EB'S COMPLETE (SPA AND FBA)	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
133	TO WASTE WELL	TW	DB	0X0000	0X0000	0x15	0x00	0X00	0X00
134		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
135		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0x00	0X00
136	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0X0000	0X0000	0X00	0x25	0X00	0X00
137		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
138		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0x00	0X00
139	CLEAR PIPETTER/HOME CP AND SP	CP	HC	0X0000	0X0000	0X16	0X00	0X00	0X00
140		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
141		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0x00	0X00
142		0X0000	0X0000	0X0000	0X0000	0x00	0x00	0xFF	0X00
143	SEND COMPLETION SIGNAL TO HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
144	WAIT FOR CONTROL RESULT FROM HOST; BRANCH TO "OE" (CLEAR RACK IF FAILED (0))	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMRD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
145	IF SM REPLIES '0', BRANCH TO "0E" (CLEAR RACK)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
146	MOVE TO NEXT CONTROL TUBE POSITION	0X0000	0X0000	MN	0X0000	0X00	0X00	0X32	0X00
147	BRANCH TO "16" (GO RESUME)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
148	END OF RQ SEQUENCE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
149	BEGIN "17" (AUTOFOCUS CONTROL); RESET HLCS	RE	RE	RE	0X0000	0XFF	0XFF	0XFF	0X00
150	RETRIEVE CONTROL ID (BAR CODE)	0X0000	0X0000	0X0707	0X0000	0X00	0X00	0X00	0X00
151	GET SAMPLE INFO FROM HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
152	IF SM REPLIES '00', BRANCH TO "MOVE TO NEXT"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
153	IF SM REPLIES '-2', BRANCH TO "0E" (CLEAR RACK)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
154	RECORD CURRENT AUTOFOCUS POSITION (REQUIRES	0X0000	0X0000	0X0000	HW	0X00	0X00	0X00	0x31
155	WAIT FOR OBA COMPLETE.	0X0000	0X0000	0X0000	0x0000	0X00	0X00	0X00	0xFF
156	RETURN TO AUTOFOCUS POSITION	0X0000	0X0000	0X0000	MO	0X00	0X00	0X00	0x32
157	WAIT FOR OBA COMPLETE.	0X0000	0X0000	0X0000	0x0000	0X00	0X00	0X00	0xFF
158	TO TEST TUBE (INITIALIZE EP PUMP)	TT	0X0000	0X0000	0X0000	0x11	0x00	0X00	0X00
159	WAIT FOR TT COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
160	DUMMY STATE (FUTURE WAIT FOR HOST TO VERIFY READY	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
161	MOVE PIPETTE DOWN TO ASPIRATE POSITION IN TEST	TD	0X0000	0X0000	0X0000	0X13	0x00	0X00	0X00
162	WAIT FOR TD COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
163	AUTOFOCUSREADYFORCOMMAND: TELL HOST WE'RE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
164	WAIT FOR AN AUTO FOCUS COMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
165	SM REPLY = "00" -> AUTOFOCUSCLEANUP	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
166	SM REPLY = "01" ->	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
167	SM REPLY = "02" -> AUTOFOCUSCOARSE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
168	SM REPLY = "03" -> AUTOFOCUSPEAK	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
169	SM REPLY = "04" -> AUTOFOCUSCLINICAL	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
170	SM REPLY = "05" -> AUTOFOCUSCLINICAL	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
171	SM REPLY = "10" ->	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
172	SM REPLY = "11" -> AUTOFOCUSPEAKFINALOFFSET	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
173	SM REPLY = "12" -> AUTOFOCUSCLINICALFINALOFFSET	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
174	SM REPLY = "20" -> AUTOFOCUSFORWARD1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
175	SM REPLY = "21" -> AUTOFOCUSFORWARD2	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
176	SM REPLY = "22" -> AUTOFOCUSFORWARD4	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
177	SM REPLY = "23" -> AUTOFOCUSFORWARD8	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
178	SM REPLY = "24" -> AUTOFOCUSFORWARD16	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
179	SM REPLY = "25" -> AUTOFOCUSFORWARD32	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
180	SM REPLY = "26" -> AUTOFOCUSFORWARD64	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
181	SM REPLY = "27" -> AUTOFOCUSFORWARD128	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
182	SM REPLY = "28" -> AUTOFOCUSFORWARD256	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
183	SM REPLY = "29" -> AUTOFOCUSFORWARD512	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
184	SM REPLY = "2A" -> AUTOFOCUSFORWARD1024	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
185	SM REPLY = "2B" -> AUTOFOCUSFORWARD2048	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
186	BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
187	AUTOFOCUSLIGHTLEVELADJUSTMENT: SEND CURRENT	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
188	WAIT FOR STROBE SETTING	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
189	PAUSE FOR IT TO TAKE EFFECT	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00

SMTST	TOSM	TVALUE	TFUNC	SENS	STST	SMSK	END	BRAN	DEST	TRANSLATED PARAMETERS
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	0x3045	0x00, 0x00, 0x0101, 0x0020, 0x3045],
0x0000	0x36	0x002D	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	0x3136	0x00, 0x00, 0x0000, 0x0101, 0x3136],
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0	0x002E	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0	0x002F	0x44	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000],
0x3032	0x81	0x0030	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	326	0x00, 0x00, 0x0101, 0x0020, 326],
0x2D32	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	0x3045	0x00, 0x00, 0x0101, 0x0020, 0x3045],
0x0000	0	0x2000	0x04	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000],
0x0000	0	0x2000	0x04	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000],
0x0000	0	0x2000	0x04	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000],
0x0000	0	0x2000	0x04	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000],
0x0000	0	0x2000	0x04	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000],
0x0000	0	0x0061	0x42	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0x14	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000],
0x3133	0	0x2000	0x04	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	313	0x00, 0x00, 0x0101, 0x2020, 313],
0x3031	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	187	0x00, 0x00, 0x0101, 0x2020, 187],
0x3032	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	197	0x00, 0x00, 0x0101, 0x2020, 197],
0x3033	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	224	0x00, 0x00, 0x0101, 0x2020, 224],
0x3034	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	252	0x00, 0x00, 0x0101, 0x2020, 252],
0x3035	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	328	0x00, 0x00, 0x0101, 0x2020, 328],
0x3130	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	283	0x00, 0x00, 0x0101, 0x2020, 283],
0x3131	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	285	0x00, 0x00, 0x0101, 0x2020, 285],
0x3132	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	287	0x00, 0x00, 0x0101, 0x2020, 287],
0x3230	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	289	0x00, 0x00, 0x0101, 0x2020, 289],
0x3231	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	291	0x00, 0x00, 0x0101, 0x2020, 291],
0x3232	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	293	0x00, 0x00, 0x0101, 0x2020, 293],
0x3233	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	295	0x00, 0x00, 0x0101, 0x2020, 295],
0x3234	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	297	0x00, 0x00, 0x0101, 0x2020, 297],
0x3235	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	299	0x00, 0x00, 0x0101, 0x2020, 299],
0x3236	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	301	0x00, 0x00, 0x0101, 0x2020, 301],
0x3237	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	303	0x00, 0x00, 0x0101, 0x2020, 303],
0x3238	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	305	0x00, 0x00, 0x0101, 0x2020, 305],
0x3239	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	307	0x00, 0x00, 0x0101, 0x2020, 307],
0x3241	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	309	0x00, 0x00, 0x0101, 0x2020, 309],
0x3242	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x2020	311	0x00, 0x00, 0x0101, 0x2020, 311],
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	163	0x00, 0x00, 0x0000, 0x0101, 163],
0x0000	0x8B	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000],
0x3130	0	0x2000	0x04	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],
0x0000	0	0x0032	0x42	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000],

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
190	SEND STROBE SETTING TO SM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
191	WAIT FOR "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
192	CAPTURE BACKGROUNDS FOR LIGHT LEVEL	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
193	WAIT FOR SM TO BE DONE WITH LIGHT LEVEL BACKGROUNDS	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
194	IF SM REPLIES '00' BRANCH TO "HANDLE STROBE"; ELSE FALL THROUGH	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
195	SEND COMPLETION SIGNAL TO HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
196	BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
197	AUTOFOCUSCOARSE: RETRIEVE CONTROL ID (BAR CODE)	0X0000	0X0000	0X0707	0X0000	0X00	0X00	0X00	0X00
198	GET SAMPLE INFO FROM HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
199	IF SM REPLIES '00', BRANCH TO "MOVE TO NEXT CONTROL TUBE POSITION (AF)"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
200	IF SM REPLIES '-2' BRANCH TO "OF" (CLEAR RACK)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
201	WAIT FOR "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
202	START SHEATH FOR BACKGROUND CAPTURE	SB	0X0000	0X0000	0X0000	0X31	0X00	0X00	0X00
203	WAIT FOR SB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
204	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
205	CAPTURE BACKGROUND AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE) OR SHORT SAMPLE DETECTOR	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
206	SEND "SHORT SAMPLE" MESSAGE AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE), IF EXCEEDS 10 SEC'S - GOTO BX.	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
207	TURN OFF FP PUMP ON SPA	FB	0X0000	0X0000	0X0000	0X34	0X00	0X00	0X00
208	WAIT FOR FB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
209	INITIAL OFFSET A (COARSE)	0X0000	0X0000	0X0000	0X0000	IA	0X00	0X00	0X33
210	WAIT FOR OBA BACK TO IDLE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0xFF
211	WAIT FOR "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
212	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0X0000	0X0000	0X17	0X00	0X00	0X00
213	WAIT FOR AS AND RC COMPI FTF	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
214	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
215	COARSEFW1_AF	0X0000	0X0000	0X0000	NA	0X00	0X28	0X00	0X33
216	WAIT FOR OBA BACK TO IDLE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0xFF
217	CAPTURE SAMPLE FRAMES ("SMCSATNEXTAUTO FOCUSPOSITION") AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE OR SHORT SAMPLE DETECTOR	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
218	SEND "SHORT SAMPLE" MESSAGE AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
219	IF SM ARGUMENT TO "DONEGATHERINGIMAGES" IS '00' BRANCH TO FORWARD1ONFOCUSMOTOR; ELSE FALL THROUGH	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
220	SEND COMPLETION SIGNAL TO HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
221	HOME PUMPS	HC	HC	0X0000	0X0000	0X27	0X00	0X00	0X00
222	WAIT FOR AS AND RC COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0XFF	0X00	0X00
223	BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
224	AUTOFOCUSPEAK: RETRIEVE CONTROL ID (BAR CODE)	0X0000	0X0000	0X0707	0X0000	0X00	0X00	0X00	0X00
225	GET SAMPLE INFO FROM HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
226	IF SM REPLIES '00', BRANCH TO "MOVE TO NEXT CONTROL TUBE POSITION (AF)"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
227	IF SM REPLIES '-2' BRANCH TO "OF" (CLEAR RACK)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
228	WAIT FOR "IMAGE PROCESSING IDLE"	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
229	START SHEATH FOR BACKGROUND CAPTURE	SB	0X0000	0X0000	0X0000	0X31	0X00	0X00	0X00
230	WAIT FOR SB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0X00	0X00
231	TIMER DELAY BEFORE CAPTURE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00

SMTST	TOSM	TVALUE	TFUNC	SENS	STST	SMSK	END	BRAN	DEST	TRANSLATED PARAMETERS
0x0000	0x8B	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x3338	0x37	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0x83	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x3034	0	0x0000	0x00	0x0000	0x00	0x00	0x0010	0x0000	0x0000	0x00, 0x00, 0x0010, 0x0000, 0x0000},
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	279	0x00, 0x00, 0x0101, 0x0020, 279},
0x0000	0x87	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	163	0x00, 0x00, 0x0000, 0x0101, 163},
0x0000	0	0x002F	0x44	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x3032	0x81	0x0030	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	326	0x00, 0x00, 0x0101, 0x0020, 326},
0x2D32	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	0x3045	0x00, 0x00, 0x0101, 0x0020, 0x3045},
0x3338	0x37	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0018	0x42	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x3034	0x83	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	207	0x00, 0x02, 0x0001, 0x0010, 207},
0x3034	0x31	0x0019	0x43	0x0000	0x00	0x00	0x0010	0x0000	0x4258	0x00, 0x00, 0x0010, 0x0000, 0x4258},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x003B	0x44	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000},
0x0000	0	0x003B	0x44	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000},
0x3338	0x37	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x0000	0	0x0062	0x42	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x0000	0	0x0041	0x44	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000},
0x0000	0	0x2000	0x04	0x0000	0x00	0x00	0x0040	0x0000	0x0000	0x00, 0x00, 0x0040, 0x0000, 0x0000},
0x3036	0x8D	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	219	0x00, 0x02, 0x0001, 0x0010, 219},
0x3036	0x31	0x0063	0x43	0x0000	0x00	0x00	0x0010	0x0000	0x4258	0x00, 0x00, 0x0010, 0x0000, 0x4258},
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	215	0x00, 0x00, 0x0101, 0x0020, 215},
0x0000	0x87	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x8606	0x0000	0x0000	0x00, 0x00, 0x8606, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0101	163	0x00, 0x00, 0x0000, 0x0101, 163},
0x0000	0	0x002F	0x44	0x0000	0x00	0x00	0x0101	0x0000	0x0000	0x00, 0x00, 0x0101, 0x0000, 0x0000},
0x3032	0x81	0x0030	0x44	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x3030	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	326	0x00, 0x00, 0x0101, 0x0020, 326},
0x2D32	0	0x0000	0x00	0x0000	0x00	0x00	0x0101	0x0020	0x3045	0x00, 0x00, 0x0101, 0x0020, 0x3045},
0x3338	0x37	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x001F	0x0000	0x0000	0x00, 0x00, 0x001F, 0x0000, 0x0000},
0x0000	0	0x0000	0x00	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},
0x0000	0	0x0018	0x42	0x0000	0x00	0x00	0x0000	0x0000	0x0000	0x00, 0x00, 0x0000, 0x0000, 0x0000},

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
232	CAPTURE BACKGROUND AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE) OR SHORT SAMPLE DETECTOR.	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
233	SEND 'SHORT SAMPLE' MESSAGE AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE). IF EXCEEDS 10 SECS - GOTO BX.	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
234	TURN OFF EP PUMP ON SPA	FB	0x0000	0x0000	0x0000	0x34	0x00	0x00	0x00
235	WAIT FOR EB COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
236	IF SM REPILES '-1' BRANCH TO "END"; ELSE FALL THROUGH	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
237	INITIAL OFFSET B (PEAK)	0x0000	0x0000	0x0000	IB	0x00	0x00	0x00	0x33
238	WAIT FOR OBA BACK TO IDLE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0xFF
239	WAIT FOR "IMAGE PROCESSING IDLE"	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
240	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0x0000	0x0000	0x17	0x00	0x00	0x00
241	WAIT FOR AS AND RC COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
242	TIMER DELAY BEFORE CAPTURE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
243	PEAKFW1 AF	0x0000	0x0000	0x0000	NB	0x00	0x28	0x00	0x33
244	WAIT FOR OBA BACK TO IDLE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0xFF
245	CAPTURE SAMPLE FRAMES ("SMCSATNEXTAUTOFOCUSPOSITION") AND SEND "SHORT SAMPLE" MESSAGE AND WAIT FOR SAMPLE FRAME	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
246	CAPTURE COMPLETE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
	IF SM ARGUMENT TO "DONEGATHERINGIMAGES" IS '00' BRANCH TO								
247	FORWARD TO FOCUS MOTOR; ELSE FALL THROUGH	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
248	SEND COMPLETION SIGNAL TO HOST	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
249	HOME PUMPS	HC	HC	0x0000	0x0000	0x27	0x00	0x00	0x00
250	WAIT FOR AS AND RC COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0xFF	0x00	0x00
251	BRANCH TO AUTOFOCUSREADYFORCOMMAND	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
252	AUTOFOCUSCLINICAL: RETRIEVE CONTROL ID (BAR CODE)	0x0000	0x0000	0x0707	0x0000	0x00	0x00	0x00	0x00
253	GET SAMPLE INFO FROM HOST	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
	IF SM REPILES '00' BRANCH TO "MOVE TO NEXT CONTROL TUBE POSITION (AF)"								
254	CONTROL TUBE POSITION (AF)	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
255	IF SM REPILES '-2', BRANCH TO "0E" (CLEAR RACK)	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
256	WAIT FOR "IMAGE PROCESSING IDLE"	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
257	START SHEATH FOR BACKGROUND CAPTURE	SB	0x0000	0x0000	0x0000	0x31	0x00	0x00	0x00
258	WAIT FOR SB COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
259	TIMER DELAY BEFORE CAPTURE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
	CAPTURE BACKGROUND AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE) OR SHORT SAMPLE DETECTOR.								
260	SEND "SHORT SAMPLE" MESSAGE AND WAIT FOR FRAME PROCESSING COMPLETE (FUTURE WAIT FOR FRAME CAPTURE COMPLETE), IF EXCEEDS 10 SECS - GOTO BX.	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
261	CAPTURE COMPLETE, IF EXCEEDS 10 SECS - GOTO BX.	EB	0x0000	0x0000	0x0000	0x34	0x00	0x00	0x00
262	TURN OFF EP PUMP ON SPA	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
263	WAIT FOR EB COMPLETE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
264	IF SM REPILES '-1' BRANCH TO "END"; ELSE FALL THROUGH	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
265	INITIAL OFFSET C (CLINICAL)	0x0000	0x0000	0x0000	IC	0x00	0x00	0x00	0x33
266	WAIT FOR OBA BACK TO IDLE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0xFF
267	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0x0000	0x0000	0x17	0x00	0x00	0x00
268	WAIT FOR AS AND RC COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0xFF	0x00	0x00
269	TIMER DELAY BEFORE CAPTURE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
270	CLINICALFW1 AF	0x0000	0x0000	0x0000	NC	0x00	0x28	0x00	0x33
271	WAIT FOR OBA BACK TO IDLE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0xFF

SMTST	TOSM	TVALUE	TFUNC	SENS	STST	SMSK	END	BRAN	DEST	TRANSLATED PARAMETERS
0X3034	0X83	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	234	0x00, 0x02, 0x0001, 0x0010, 234},
0X3034	0x31	0X0019	0x43	0x0000	0x00	0x00	0X0010	0x0000	0x4258	0x00, 0x00, 0X0010, 0x0000, 0x4258},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x001F	0X0000	0X0000	0x00, 0x00, 0x001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x001F	0X0000	0X0000	0x00, 0x00, 0x001F, 0X0000, 0X0000},
0X2D31	0	0X0000	0X00	0x0000	0x00	0x00	0X0101	0X0020	335	0x00, 0x00, 0X0101, 0X020, 335},
0X0000	0	0X003B	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X0000	0	0X003B	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X3338	0x37	0X0000	0x00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x8606	0X0000	0X0000	0x00, 0x00, 0x8606, 0X0000, 0X0000},
0X0000	0	0X0062	0x42	0x0000	0x00	0x00	0X0000	0X0000	0X0000	0x00, 0x00, 0X0000, 0x0000, 0X0000},
0X0000	0	0X0041	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X0000	0	0X003B	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X3036	0X8D	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	247	0x00, 0x02, 0x0001, 0x0010, 247},
0X3036	0x31	0X0063	0x43	0X0000	0x00	0x00	0X0010	0X0000	0X4258	0x00, 0x00, 0X0010, 0X0000, 0X4258},
0X3030	0	0X0000	0X00	0x0000	0x00	0x00	0X0101	0X0020	243	0x00, 0x00, 0X0101, 0X0020, 243},
0X0000	0x87	0X0000	0X00	0x0000	0x00	0x00	0X0101	0X0000	0X0000	0x00, 0x00, 0X0101, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x8606	0X0000	0X0000	0x00, 0x00, 0x8606, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0X0000	0X0101	163	0x00, 0x00, 0X0000, 0X0101, 163},
0X0000	0	0X002F	0x44	0x0000	0x00	0x00	0X0101	0X0000	0X0000	0x00, 0x00, 0X0101, 0X0000, 0X0000},
0X3032	0x81	0X0030	0x44	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X3030	0	0X0000	0X00	0x0000	0x00	0x00	0X0101	0X0020	326	0x00, 0x00, 0X0101, 0X0020, 326},
0X2D32	0	0X0000	0X00	0x0000	0x00	0x00	0X0101	0X0020	0x3045	0x00, 0x00, 0X0101, 0X0020, 0x3045},
0X3338	0x37	0X0000	0X00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0018	0x42	0x0000	0x00	0x00	0X0000	0X0000	0X0000	0x00, 0x00, 0X0000, 0x0000, 0X0000},
0X3034	0X83	0x0000	0x00	0x0032	0x00	0x02	0x0001	0x0010	262	0x00, 0x02, 0x0001, 0x0010, 262},
0X3034	0x31	0X0019	0x43	0x0000	0x00	0x00	0X0010	0x0000	0x4258	0x00, 0x00, 0X0010, 0x0000, 0x4258},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x001F	0X0000	0X0000	0x00, 0x00, 0x001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x001F	0X0000	0X0000	0x00, 0x00, 0x001F, 0X0000, 0X0000},
0X2D31	0	0X0000	0X00	0x0000	0x00	0x00	0X0101	0X0020	335	0x00, 0x00, 0X0101, 0X020, 335},
0X0000	0	0X003B	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X0000	0	0X003B	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0X001F	0X0000	0X0000	0x00, 0x00, 0X001F, 0X0000, 0X0000},
0X0000	0	0X0000	0X00	0x0000	0x00	0x00	0x8606	0X0000	0X0000	0x00, 0x00, 0x8606, 0X0000, 0X0000},
0X0000	0	0X0062	0x42	0x0000	0x00	0x00	0X0000	0X0000	0X0000	0x00, 0x00, 0X0000, 0x0000, 0X0000},
0X0000	0	0X0041	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},
0X0000	0	0X003B	0x44	0x0000	0x00	0x00	0x0040	0X0000	0X0000	0x00, 0x00, 0x0040, 0X0000, 0X0000},

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
272	CAPTURE SAMPLE FRAMES ("SMCSATNEXTAUTOFOCUSPOSITION") AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE OR SHORT SAMPLE DETECTOR	0X0000	0X0000	0X0000	0X0000	0x00	0X00	0X00	0X00
273	SEND "SHORT SAMPLE" MESSAGE AND WAIT FOR SAMPLE FRAME CAPTURE COMPLETE	0X0000	0X0000	0X0000	0X0000	0x00	0X00	0X00	0X00
274	IF SM ARGUMENT TO "DONEGATHERINGIMAGES" IS '00' BRANCH TO FORWARD10NFOCUSMOTOR; ELSE FALL THROUGH	0X0000	0X0000	0X0000	0X0000	0x00	0X00	0X00	0X00
275	SEND COMPLETION SIGNAL TO HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
276	HOME PUMPS	HC	HC	0X0000	0X0000	0x27	0x00	0X00	0X00
277	WAIT FOR AS AND RC COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0xFF	0X00	0X00
278	BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
279	HANDLESTROBE: WAIT FOR STROBE SETTING	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
280	PAUSE FOR IT TO TAKE EFFECT	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
281	SEND STROBE SETTING TO SM	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
282	BRANCH BACK TO WAITFORSMTOBEDONEWITHBACKGROUNDS	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
283	AUTOFOCUSCOARSEFINALOFFSET	0X0000	0X0000	0X0000	BA	0X00	0X00	0X00	0X00
284	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
285	AUTOFOCUSPEAKFINALOFFSET	0X0000	0X0000	0X0000	BB	0X00	0X00	0X00	0X00
286	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
287	AUTOFOCUSCLINICALFINALOFFSET	0X0000	0X0000	0X0000	BC	0X00	0X00	0X00	0X00
288	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
289	AUTOFOCUSFORWARD1	0X0000	0X0000	0X0000	F0	0X00	0X00	0X00	0X00
290	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
291	AUTOFOCUSFORWARD2	0X0000	0X0000	0X0000	F1	0X00	0X00	0X00	0X00
292	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
293	AUTOFOCUSFORWARD4	0X0000	0X0000	0X0000	F2	0X00	0X00	0X00	0X00
294	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
295	AUTOFOCUSFORWARD8	0X0000	0X0000	0X0000	F3	0X00	0X00	0X00	0X00
296	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
297	AUTOFOCUSFORWARD16	0X0000	0X0000	0X0000	F4	0X00	0X00	0X00	0X00
298	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
299	AUTOFOCUSFORWARD32	0X0000	0X0000	0X0000	F5	0X00	0X00	0X00	0X00
300	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
301	AUTOFOCUSFORWARD64	0X0000	0X0000	0X0000	F6	0X00	0X00	0X00	0X00
302	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
303	AUTOFOCUSFORWARD128	0X0000	0X0000	0X0000	F7	0X00	0X00	0X00	0X00
304	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
305	AUTOFOCUSFORWARD256	0X0000	0X0000	0X0000	F8	0X00	0X00	0X00	0X00
306	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
307	AUTOFOCUSFORWARD512	0X0000	0X0000	0X0000	F9	0X00	0X00	0X00	0X00
308	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
309	AUTOFOCUSFORWARD1024	0X0000	0X0000	0X0000	FA	0X00	0X00	0X00	0X00
310	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
311	AUTOFOCUSFORWARD2048	0X0000	0X0000	0X0000	FB	0X00	0X00	0X00	0X00
312	WAIT FOR OBA AND BRANCH TO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
313	AUTOFOCUSCLEANUP: TO WASTE WELL	IW	DB	0X0000	0X0000	0x15	0x00	0X00	0X00
314		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
315		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
316	TEST SHEATH FULL SENSOR	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
317	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0X0000	0X0000	0x00	0x25	0X00	0X00

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
317	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0X0000	0X0000	0X00	0x25	0X00	0X00
318	TURN ON RINSE PUMP AND RINSE PIPETTER	TQ	RP	0X0000	0X0000	0X00	0x25	0X00	0X00
319		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
320		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
321	CLEAR PIPETTER/HOME CP AND SP/MOVE TO NEXT TUBE	CP	HC	MN	0X0000	0X16	0X00	0X00	0X00
322		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
323		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
324		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
325	BRANCH TO "16" (GO RESUME) MOVE TO NEXT CONTROL TUBE_AF: MOVE TO NEXT CONTROL TUBE POSITION (AF)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
326	BRANCH TO "16" (GO RESUME)	0X0000	0X0000	MN	0X0000	0X00	0X00	0X32	0X00
327	VALIDATE FOCUS POSITION: WAIT FOR OBA IDLE.	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
328	VALIDATE CURRENT FOCUS POSITION (MUST BE IN FIRST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0xFF	
329	AF VALIDATE1: IF 31 ("GOOD") FROM OBA GOTO AF_ISVALID	0X0000	0X0000	0X0000	VP	0X00	0X00	0X00	0X00
330	IF 30 ("BAD") FROM OBA GOTO AF_ISNOTVALID	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0x31
331		0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0x30
332	LOOP BACK TO AF_VALIDATE1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
333	AF_ISVALID: SEND EFOCUSPOSITIONISVALID (0X29) TO HOST AND GOTO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
334	AF_ISNOTVALID: SEND EFOCUSPOSITIONISNOTVALID (0X28) TO HOST AND GOTO AUTOFOCUSREADYFORCOMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
335	END 17 (AUTOFOCUS CONTROL)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
336	START NEW IDLE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0xFF	0X00
337	SEND SYNCH COMMAND TO HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
338	WAIT FOR SM COMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
339	TELL STM TO LOOK FOR RACKS	0X0000	0X0000	WR	0X0000	0X00	0X00	0X00	0X00
340	WAIT FOR BUTTON OR RACK	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X52	0X00
341	SEND SYNCH COMMAND TO HOST	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
342	WAIT FOR SM COMMAND	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
343	BRANCH TO SHUTDOWN IF STANDBY PERIOD EXCEEDED	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
344	UNCONDITIONALLY BRANCH TO END IDLE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
345	BRANCH TO WAKEUP LONG IF LONG STANDBY PERIOD EXCEEDED	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
346	BRANCH TO WAKEUP MEDIUM IF INTERMEDIATE STANDBY PERIOD	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
347	BRANCH UNCONDITIONALLY TO WAKEUP SHORT	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
348		0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
349	TIMEOUT - GO TO REAL IDLE	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
350	START PI TO TEST TUBE; ALSO START WA(WASH)	TT	0X0000	0X0000	0X0000	0x11	0x00	0X00	0X00
351		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
352	START SHEATH FOR BACKGROUND CAPTURE	SB	0X0000	0X0000	0X0000	0x31	0X00	0X00	0X00
353	WAIT FOR SB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
354	TIMER DELAY	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
355	TURN OFF EP PUMP ON SPA	FB	0X0000	0X0000	0X0000	0x34	0x00	0X00	0X00
356	WAIT FOR EB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
357	MOVE PIPETTE DOWN TO ASPIRATE POSITION IN TEST TUBE	TD	0X0000	0X0000	0X0000	0x13	0x00	0X00	0X00
358	WAIT FOR TD COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
359	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0X0000	0X0000	0x17	0x00	0X00	0X00
360	WAIT FOR AS AND RC COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
361	TIMER DELAY	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
362	TURN OFF EP PUMP ON SPA, SP PUMP ON FBA	EB	EB	0X0000	0X0000	0x34	0x00	0X00	0X00
363	WAIT FOR EB'S COMPLETE (SPA AND FBA)	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
364	TO WASTE WELL	TW	DB	0X0000	0X0000	0x15	0x00	0X00	0X00
365		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
366		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
367	DRAIN FLOWCELL	DF	0X0000	0X0000	0X0000	0x26	0x00	0X00	0X00
368		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
369	PRIME SHEATH SUPPLY LINE	PS	0X0000	0X0000	0X0000	0x20	0x00	0X00	0X00
370		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
371	PRIME ALL PUMPS	PP	PC	0X0000	0X0000	0x21	0x00	0X00	0X00
372		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
373		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
374	PRIME INNER LINES #1	TR	PI	0X0000	0X0000	0x00	0x24	0X00	0X00
375		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
376		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
377	PRIME INNER LINES #2	PL	0X0000	0X0000	0X0000	0X22	0x00	0X00	0X00
378		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
379	PRIME ASPIRATION LINE	TR	PA	0X0000	0X0000	0X00	0x26	0X00	0X00
380		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
381		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
382	DEBUBBLE	0X0000	DE	0X0000	0X0000	0X00	0x30	0X00	0X00
383		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
384	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0X0000	0X0000	0X00	0x25	0X00	0X00
385		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
386		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
387	CLEAR PIPETTER	CP	HC	0X0000	0X0000	0X16	0X00	0X00	0X00
388		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
389		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
390	MOVE TO NEXT TUBE POSITION	0X0000	0X0000	MN	0X0000	0X00	0X00	0X32	0X00
391	BRANCH TO "16" (GO RESUME)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
392	END WA (WASH)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
393	START ZZ (SLEEP)	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
394	END ZZ (SLEEP)	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
395	START SS: RESET HLCS	RE	RE	RE	RE	0xFF	0XFF	0XFF	0XFF
396	MAKE SURE OUTPUT IS CLEAR (STM:IC RETURNS 'T' OR 'F')	0X0000	0x0000	I	0X0000	0x00	0x00	0x00	0X00
397	GOT 'T'? IF SO, BRANCH TO SET FRONT PANEL LIGHTS SS	0X0000	0x0000	0x0000	0x0000	0x00	0x00	0x54	0X00
398	GOT 'E'? IF SO, BRANCH TO END OF GO SEQUENCE	0X0000	0x0000	0x0000	0x0000	0x00	0x00	0x46	0X00
399	LOOP BACK TO LOOKING FOR T1	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
400	SET FRONT PANEL LIGHTS (BUTTON GREEN, LED BLUE)	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0XF	0X00
401	TELL STM TO FIND RACK	PH	0X0000	M1	0X0000	0X00	0X00	0X00	0X00
402	IF 31 FROM STM GOTO WAIT UNTIL STM AT IDLE_SS	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X31	0X00
403	NO RACK - END SS BRANCH TARGET	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X39	0X00
404	LOOP BACK	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00
405	WAIT UNTIL STM AT IDLE_SS (WAIT FOR SPA IDLE AS WELL)	0X0000	0X0000	0X0000	0X0000	0xFF	0X00	0XFF	0X00
406	MOVE TO NEXT TUBE POSITION (FIRST TUBE ASPIRATE POSITION)	0X0000	0X0000	MN	0X0000	0X00	0X00	0X32	0X00
407	TO TEST TUBE	TT	0X0000	0X0000	0X0000	0x11	0x00	0X00	0X00
408		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
409	START SHEATH FOR BACKGROUND CAPTURE	SB	0X0000	0X0000	0X0000	0x31	0X00	0X00	0X00
410	WAIT FOR SB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
411	TIMER DELAY	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
412	TURN OFF FP PUMP ON SPA	EB	0X0000	0X0000	0X0000	0x34	0x00	0X00	0X00
413	WAIT FOR EB COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
414	MOVE PIPETTER DOWN TO ASPIRATE POSITION IN TEST TUBE	TO	0X0000	0X0000	0X0000	0xT3	0x00	0X00	0X00
415	WAIT FOR TO COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
416	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0X0000	0X0000	0x17	0x00	0X00	0X00
417	WAIT FOR AS AND RC COMPLETE	0X0000	0X0000	0X0000	0X0000	0xFF	0xFF	0X00	0X00
418	TIMER DELAY	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
419	TURN OFF FP PUMP ON SPA, SP PUMP ON FBA	EB	EB	0X0000	0X0000	0x34	0x00	0X00	0X00
420	WAIT FOR EB'S COMPLETE (SPA AND FBA)	0X0000	0X0000	0X0000	0X0000	0xFF	0xFF	0X00	0X00
421	TO WASTE WELL	TW	DB	0X0000	0X0000	0x15	0x00	0X00	0X00
422		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
423		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
424	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0X0000	0X0000	0X00	0x25	0X00	0X00
425		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
426		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
427	CLEAR PIPETTER/HOME CP AND SP/MOVE TO NEXT TUBE	CP	HC	MN	0X0000	0X16	0X00	0X00	0X00
428		0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0X00	0X00
429		0X0000	0X0000	0X0000	0X0000	0x00	0xFF	0X00	0X00
430		0X0000	0X0000	0X0000	0X0000	0x00	0x00	0XFF	0X00
431	MAKE SURF SPA AND STM IDLE	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0XFF	0X00
432	SEND CR TO STM: HOME PIPETTER	PH	0X0000	CR	0X0000	0X00	0X00	0X33	0X00
433	HOME STM CARRIERS	0X0000	0X0000	0X0000	0X0000	0xFF	0x00	0XFF	0X00
434	END OF SS SEQUENCE	0X0000	0X0000	0X0000	0X0000	0x00	0x00	0X00	0X00
435	SW WAKEUP FROM SHORT STANDBY PERIOD - TURN STROBE ON	0X0000	0X0000	0X0000	0X0000	0X00	0X00	0X00	0X00

FIG. 812

STATE INDEX	STATE DESCRIPTION	SPACMD	FBACMD	STMCMD	OBACMD	SPASTAT	FBASTAT	STMSTAT	OBASTAT
436		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
437		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
438	UNCONDITIONALLY BRANCH TO GO	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
439	END OF SW	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
440	MW WAKEUP FROM INTERMEDIATE STANDBY PERIOD - TURN STROBE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
441		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
442		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
443	UNCONDITIONALLY BRANCH TO GO	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
444	END OF MW	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
445	LW WAKEUP FROM LONG STANDBY PERIOD - TURN STROBE ON	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
446		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
447		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
448	UNCONDITIONALLY BRANCH TO GO	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
449	END OF LW	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
450	SD SHUTDOWN - AUTO SHUTDOWN AFTER STANDBY TIMER EXPIRED	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
451	TURN STROBE OFF	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
452		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
453	END OF SD	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
454	START DL (DILUENT); TO TEST TUBE	TT	0x0000	0x0000	0x0000	0x11	0x00	0x00	0x00
455		0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
456	START SHEATH FOR BACKGROUND CAPTURE	SB	0x0000	0x0000	0x0000	0x31	0x00	0x00	0x00
457	WAIT FOR SB COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
458	TIMER DELAY	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
459	TURN OFF EP PUMP ON SPA	EB	0x0000	0x0000	0x0000	0x34	0x00	0x00	0x00
460	WAIT FOR EB COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
461	MOVE PIPETTE DOWN TO ASPIRATE POSITION IN TEST TUBE	TD	0x0000	0x0000	0x0000	0x13	0x00	0x00	0x00
462	WAIT FOR TD COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
463	START ASPIRATION FOR SAMPLE TRANSFER	AS	RC	0x0000	0x0000	0x17	0x00	0x00	0x00
464	WAIT FOR AS AND RC COMPLETE	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
465	TIMER DELAY	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
466	TURN OFF EP PUMP ON SPA, SP PUMP ON FBA	EB	EB	0x0000	0x0000	0x34	0x00	0x00	0x00
467	WAIT FOR EB'S COMPLETE (SPA AND FBA)	0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
468	TO WASTE WELL	TW	DB	0x0000	0x0000	0x15	0x00	0x00	0x00
469		0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
470		0x0000	0x0000	0x0000	0x0000	0x00	0xFF	0x00	0x00
471	TURN ON RINSE PUMP AND RINSE PIPETTER	TR	RP	0x0000	0x0000	0x00	0x25	0x00	0x00
472		0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
473		0x0000	0x0000	0x0000	0x0000	0x00	0xFF	0x00	0x00
474	CLEAR PIPETTER/HOME CP AND SP	CP	HC	0x0000	0x0000	0x16	0x00	0x00	0x00
475		0x0000	0x0000	0x0000	0x0000	0xFF	0x00	0x00	0x00
476		0x0000	0x0000	0x0000	0x0000	0x00	0xFF	0x00	0x00
477		0x0000	0x0000	0x0000	0x0000	0x00	0x00	0xFF	0x00
478	RETRIEVE TUBE NUMBER; BRANCH TO KILL ("KL") IF 10 (0x0A), TERM OTHERWISE	0x0000	0x0000	0x0708	0x0000	0x00	0x00	0x0A	0x00
479	MOVE TO NEXT TUBE POSITION	0x0000	0x0000	MN	0x0000	0x00	0x00	0x32	0x00
480	BRANCH TO "16" (GO RESUME)	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
481	END OF DL SEQUENCE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
482	START KL (KILL); SEND CR TO STM; HS TO FBA+C240; HOME PIPETTOR; FLASH STANDBY	PH	HS	CR	0x0000	0x12	0x21	0x33	0x00
483	FLASH STANDBY	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
484	SEND SMCSISNSHUTDOWN MESSAGE TO SM; NO EXIT	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
485	CONDITION	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
486	END OF KL SEQUENCE	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00
487	BX BACKGROUND ERROR EXIT	FB	FB	0x0000	0x0000	0x00	0x00	0x00	0x00
	DUMMY	0x0000	0x0000	0x0000	0x0000	0x00	0x00	0x00	0x00

FIG. 9A1

STATE ORDER	STATE DESCRIPTION	ENERGIZED (VALUES ONLY)	EP	FIRST MOTOR	SECOND MOTOR	SP	SENSOR SELECT
0	IDLE		0	80FF	0	80FF	0000
1	"IT" HOME EVACUATION PUMP / ROTATE OUT TO TUBE	J7 AIR CHRG VLV, EBV3,	80FD	80FF	8441	80FF	0000
2	PLACE ROLLER ON TUBE (EP -45 DEG)	EBV3,	860C	80FF	0	80FF	0000
3	DUMMY		80FF	80FF	0	80FF	0000
4	"PH" - HOME VERTICAL TO LIFT PIPPETTER AND SEND PIPPETTER BACK TO BACK SENSOR THEN TO WASTE WELL		80FF	80FE	80FF	80FF	0000
5	HOME ROTATIONAL MOTOR TO BACK SENSOR		80FF	80FF	80FF	80FF	0000
6	ROTATE OUT -3 DEG TO WASTE WELL		80FF	80FF	8440	80FF	0000
7	CHECKING PRESSURE	J7 AIR CHRG VLV,	80FF	80FF	0	80FF	10B0
8	RECHARGE	J7 AIR CHRG VLV,	80FF	80FF	0	80FF	10B0
9	DUMMY		80FF	80FF	0	80FF	0000
10	"TD" - DOWN TO TEST TUBE		0	8643	0	80FF	0000
11	DUMMY		80FF	80FF	0	80FF	0000
12	"AS" - MIX SAMPLE (BP 1.5 SEC)	J10 BURP VLV, CBV3, EBV3,	80FF	80FF	0	80FF	0000
13	DELAY BEFORE ASPIRATE	CBV3, EBV3,	80FF	80FF	0	80FF	0000
14	ASPIRATE TO BEGINNING OF FLOW CELL	J1, J7 AIR CHRG VLV, CBV3, PBV3	4009	80FF	0	80FF	0000
15	ACTIVATE SBV TO FILL FLOW CELL WHILE PULLING EP DURING FAST	SBV3,	4022	80FF	0	80FF	0000
16	ACTIVATE SBV TO FILL FLOW CELL WHILE PULLING EP DURING SLOW PUSH OF CP DURING ANALYSIS	SBV3,	401D	80FF	0	80FF	0000
17	DUMMY	SBV3,	0	80FF	0	80FF	0000
18	"TW" LIFT PIPPETTER TO 2/3 OF THE TUBE		80FF	D556	0	80FF	0000
19	LIFT PIPPETTER TO THE TOP AND SPIT AIR	J10 BURP VLV,	80FF	80FE	0	80FF	0000
20	ROTATE IN TO WASTE WELL		80FF	80FF	8442	80FF	0000
21	DOWN TO WASTE WELL		80FF	8647	0	80FF	0000
22	DUMMY		80FF	80FF	0	80FF	0000
23	"CP" CLEAN FLOWCELL WINDOW FOR 2 SEC	CBV3, SBV3,	4019	80FF	0	80FF	0000
24	RAISE PIPPETTER		80FF	D556	0	80FF	0000
25	CLEAR PIPPETTER	J10 BURP VLV,	80FF	80FF	0	80FF	0000
26	LIFT PIPPETTER		80FF	80FF	0	80FF	0000
27	DUMMY		80FF	80FF	0	80FF	0000
28	"PS" PRIME SHEATH SUPPLY LINE		80FF	80FF	0	80FF	0000
29	DUMMY		80FF	80FF	0	80FF	0000

9B1

9A2

400 ↗

28/40

FIG. 9A2

418	420	422	424	426	428	430	432	434	436
SENSOR STATE	SENSOR MASK	MOTOR TEST	SM TEST	TOSM	TVALUE	TFUNC	END CTRL	BRAN CTRL	DEST
0	0	0	0X0000	0xFF	0X0	0X0000	0x0007	0x0000	0x0000
0	0	FB	0X0000	0X11	0X0	0X0000	0x0007	0x0000	0x0000
0	0	B3	0X0000	0X11	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X11	0X0	0X0000	0x0007	0x0000	0x0000
0	0	FF	0X0000	0X00	0X0	0X0000	0x0007	0x0000	0x0000
0	0	FF	0X0000	0X00	0X0	0X0000	0x0007	0x0000	0x0000
0	0	FB	0X0000	0X00	0X0	0X0000	0x0007	0x0000	0x0000
6	54	F3	0X0000	0X00	0X0	0X0000	0x0001	0x0101	9
5	54	F3	0X0000	0X00	0X0	0X0000	0x0001	0x0000	0x0000
0	0	F3	0X0000	0X12	0X0	0X0000	0x0007	0x0000	0x0000
0	0	23	0X0000	0X13	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X13	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X17	0x42	0x0004	0x0000	0x0000	0x0000
0	0	F3	0X0000	0X17	0X42	0X0023	0x0000	0x0000	0x0000
0	0	33	0X0000	0X17	0x42	0X0024	0x0000	0x0000	0x0000
0	0	33	0X0000	0X17	0x42	0X0025	0x0000	0x0000	0x0000
0	0	33	0X0000	0X17	0x00	0X0000	0x0007	0x0000	0x0000
0	0	33	0X0000	0X17	0X0	0X0000	0x0007	0x0000	0x0000
0	0	E3	0X0000	0X00	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X00	0X0	0X0000	0x0007	0x0000	0x0000
0	0	FB	0X0000	0x00	0X0	0X0000	0x0007	0x0000	0x0000
0	0	E3	0X0000	0X00	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X15	0X0	0X0000	0x0007	0x0000	0x0000
0	0	33	0X0000	0X00	0X42	0X0027	0x0000	0x0000	0x0000
0	0	E3	0X0000	0x16	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0x16	0X42	0X0005	0x0000	0x0000	0x0000
0	0	F3	0X0000	0x16	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X16	0X0	0X0000	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X00	0x42	0X0028	0x0000	0x0000	0x0000
0	0	F3	0X0000	0X20	0X0	0X0000	0x0007	0x0000	0x0000

9A1

9B2 ↘

STATE ORDER	STATE DESCRIPTION	ENERGIZED (VALVES ONLY)	EP	FIRST MOTOR	SECOND MOTOR	SP	SENSOR SELECT
30	"PP" PRIME EVACUATION PUMP	EBV3,	D758	80FF	0	80FF	0000
31	HOLD EBV3 FOR 3 SEC	EBV3,	80FF	80FF	0	80FF	0000
32	DUMMY		80FF	80FF	0	80FF	0000
33	"PI" HOME FP	EBV3,	80FD	80FF	0	80FF	0000
34	PRIME INNER LINE #2	CBV3, SBV3,	DB5C	80FF	0	80FF	0000
35	DUMMY		80FF	80FF	0	80FF	0000
36	"TR" TURN ON RINSE PUMP FOR 2 SEC		80FF	80FF	0	80FF	0000
37	CHECKING PRESSURE	J7 AIR CHRG	80FF	80FF	0	80FF	10B0
38	RECHARGE	J7 AIR CHRG	80FF	80FF	0	80FF	10B0
39	FILL SHEATH TANK FOR 2 SEC	VLV,	80FF	80FF	0	80FF	0000
40	DUMMY		80FF	80FF	0	80FF	0000
41	"HP" HOME EP	EBV3,	80FD	80FF	0	80FF	0000
42	DUMMY		80FF	80FF	0	80FF	0000
43	"SB" TRANSFER SHEATH DURING BACKGROUND	CBV3, SBV3,	401A	80FF	0	80FF	0000
44	DUMMY	CBV3, SBV3,	0	80FF	0	80FF	0000
45	"EB" END BACKGROUND (EP OFF)	CBV3, SBV3,	80FF	80FF	0	80FF	0000
46	DUMMY		80FF	80FF	0	80FF	0000
47	"DF" DRAIN FLOWCELL	PBV3,	DE5F	80FF	0	80FF	0000
48	DUMMY		80FF	80FF	0	80FF	0000
49	"IC" HOME EP	EBV3,	80FD	80FF	0	80FF	0000
50	PLACE ROLLER ON TUBE (EP -45 DEG)	EBV3,	860C	80FF	0	80FF	0000
51	DOWN TO TEST TUBE	PBV3,	80FF	8643	0	80FF	0000
52	WASH FLOW CELL WITH IRISOLVE	PBV3,	E061	80FF	0	80FF	0000
53	DUMMY		80FF	80FF	0	80FF	0000
54	START "Z"		0	80FF	0	80FF	0000
55	END "Z"		0	80FF	0	80FF	0000
56	"RV" RESET VALVES (SUBROUTINE TO BE USED ONLY DURING "BD" TO TURN OFF VALVES)		80FF	80FF	0	80FF	0000
57	DUMMY		80FF	80FF	0	80FF	0000
58	"FP" CHECKING PRESSURE		80FF	80FF	0	80FF	10B0
59	RECHARGE		80FF	80FF	0	80FF	10B0
60	DUMMY		80FF	80FF	0	80FF	0000
61	"S1" TURN ON SHEATH FILL PUMP		80FF	80FF	0	80FF	0000
62	DUMMY		80FF	80FF	0	80FF	0000

9C1

9B2

400 ↗

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FIG. 9B2

SENSOR STATE	SENSOR MASK	MOTOR TEST	SM TEST	TOSM	TVALUE	TFUNC	END CTRL	BRAN CTRL	DEST
0	0	B3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0x00	0X0029	0X42	0x0000	0x0000	0x0000
0	0	F3	0X0000	0X21	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	B3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0x22	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0x23	0X002A	0X42	0x0000	0x0000	0x0000
6	54	F3	0X0000	0x23	0X0000	0X0	0x0001	0x0101	38
5	54	F3	0X0000	0x23	0X0000	0X0	0x0001	0x0000	0x0000
0	0	F3	0X0000	0x23	0x0006	0x42	0x0000	0x0000	0x0000
0	0	F3	0X0000	0X23	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X24	0X0000	0X0	0x0007	0x0000	0x0000
0	0	33	0X0000	0X31	0X0000	0X0	0x0101	0x0000	0x0000
0	0	33	0X0000	0X31	0X0000	0X0	0x0000	0x0000	0x0000
0	0	F3	0X0000	0X34	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X34	0X0000	0X0	0x0007	0x0000	0x0000
0	0	B3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X26	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	B3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	E3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	B3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X27	0X0000	0X0	0x0007	0x0000	0x0000
0	0	0	0X0000	0xFF	0X0000	0X0	0x0000	0x0080	0x0000
0	0	0	0X0000	0xFF	0X0000	0X0	0x0000	0x0000	0x0000
0	0	F3	0X0000	0X00	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X26	0X0000	0X0	0x0007	0x0000	0x0000
6	54	F3	0X0000	0X00	0X0000	0X0	0x0001	0x0101	60
5	54	F3	0X0000	0X00	0X0000	0X0	0x0001	0x0000	0x0000
0	0	F3	0X0000	0X30	0X0000	0X0	0x0007	0x0000	0x0000
0	0	F3	0X0000	0X32	0X0000	0X0	0x0101	0x0000	0x0000
0	0	F3	0X0000	0X32	0X0000	0X0	0x0000	0x0000	0x0000

9B1

9C2

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FIG. 9C1

STATE ORDER	STATE DESCRIPTION	ENERGIZED (VALUES ONLY)	EP	FIRST MOTOR	SECOND MOTOR	SP	SENSOR SELECT
63	"S0" TURN OFF SHEATH FILL PUMP		80FF	80FF	0	80FF	0000
64	DUMMY		80FF	80FF	0	80FF	0000
65	"TQ" TURN ON RINSE PUMP FOR 2 SEC WITHOUT FILL SHEATH		80FF	80FF	0	80FF	0000
66	CHECKING PRESSURE	I7 AIR CHRG VLV,	80FF	80FF	0	80FF	10B0
67	RECHARGE	I7 AIR CHRG VLV,	80FF	80FF	0	80FF	10B0
68	DUMMY		80FF	80FF	0	80FF	0000
69	"HC" INITIALIZE EVACUATION PUMP	I7 AIR CHRG VLV, EBV3,	80FD	80FF	0	80FF	0000
70	PLACE ROLLER ON TUBE (EP -45 DEG)	EBV3,	860C	80FF	0	80FF	0000
71	DUMMY		80FF	80FF	0	80FF	0000

9C2!

SENSOR STATE	SENSOR MASK	MOTOR TEST	SM TEST	TOSM	TVALUE	TFUNC	END CTRL	BRAN CTRL	DEST
0	0	F3	0X0000	0X33	0X0000	0X0	0X0101	0X0000	0X0000
0	0	F3	0X0000	0X33	0X0000	0X0	0X0000	0X0000	0X0000
0	0	F3	0X0000	0X23	0X002B	0X42	0X0000	0X0000	0X0000
6	54	F3	0X0000	0X23	0X0000	0X0	0X0001	0X0101	68
5	54	F3	0X0000	0X23	0X0000	0X0	0X0001	0X0000	0X0000
0	0	F3	0X0000	0X23	0X0000	0X0	0X0007	0X0000	0X0000
0	0	F3	0X0000	0X27	0X0000	0X0	0X0007	0X0000	0X0000
0	0	B3	0X0000	0X27	0X0000	0X0	0X0007	0X0000	0X0000
0	0	F3	0X0000	0X27	0X0000	0X0	0X0007	0X0000	0X0000

← 9C1

Diagram illustrating the state transition table (FIG.10A1) with numbered callouts:

- 502: Points to State 0 (IDLE).
- 504: Points to State 1 ("HC" HOME CP AND SP).
- 500: Points to the transition arrow between State 0 and State 1.
- 506: Points to State 2 (PLACE ROLLER ON TUBE (CP 45 DEG)).
- 509: Points to the transition arrow between State 2 and State 3 (DUMMY).
- 508: Points to State 3 (DUMMY).
- 510: Points to State 4 ("PC" PRIME CANNUAL AND SHEATH PUMP).
- 512: Points to State 5 (DUMMY).
- 514: Points to State 6 ("PL" PRIME LINES).
- 516: Points to State 7 (DUMMY).

Below the table, a dashed line with arrows at both ends is labeled 10B1 on the left and 10A2 on the right.

STATE ORDER	STATE DESCRIPTION	ENERGIZED (VALUES ONLY)	EP	FIRST MOTOR	SECOND MOTOR	SP	SENSOR SELECT
0	IDLE		0	80FF	80FF	0	0000
1	"HC" HOME CP AND SP	CBV3,	80FE	80FF	80FF	80FE	0000
2	PLACE ROLLER ON TUBE (CP 45 DEG)	CBV3,	8601	80FF	80FF	80FF	0000
3	DUMMY		80FF	80FF	80FF	80FF	0000
4	"PC" PRIME CANNUAL AND SHEATH PUMP	CBV3,	C546	80FF	80FF	CA4B	0000
5	DUMMY		80FF	80FF	80FF	80FF	0000
6	"PL" PRIME LINES	DRV3, EBV3,	CC4D	80FF	80FF	80FF	0000
7	DUMMY		80FF	80FF	80FF	80FF	0000
8	RINSE PIPETTER - RP ON	SBV3, PBV3, EBV3,	80FF	80FF	80FF	C849	0000
9	OPEN SBV, PBV, AND EBV TO VENT EXCESS PRESSURE OUT	SBV3, PBV3, EBV3,	80FF	80FF	80FF	80FF	0000
10	DUMMY		80FF	80FF	80FF	80FF	0000
11	"PA" PRIME ASPARATION LINE	SBV3, PBV3, EBV3,	80FF	80FF	80FF	CE4F	0000
12	DUMMY		80FF	80FF	80FF	80FF	0000
13	"HP" HOME CP AND SP	CBV3,	80FE	80FF	80FF	80FE	0000
14	DUMMY		80FF	80FF	80FF	80FF	0000
15	"RC" DELAY BEFORE RUNNING CP FAST PUSH		80FF	80FF	80FF	80FF	0000
16	FAST PUSH		4001	80FF	80FF	80FF	0000
17	SLOW CP PUSH DURING ANALYSIS		4002	80FF	80FF	80FF	0000
18	DUMMY		0	80FF	80FF	80FF	0000
19	"DB" PLACE SP ROLLER ON HOSE WITH 45 DEG MOVE		80FF	80FF	80FF	8601	0000
20	DEBUBBLE FOR 3 SECS	CBV3, SBV3, DRV3, EBV3,	80FF	80FF	80FF	C344	0000
21	DUMMY		80FF	80FF	80FF	80FF	0000
22	"DE" DEBUBBLE (SP 10 REV.)	CBV3, SBV3, DRV3, EBV3,	80FF	80FF	80FF	D051	0000
23	DUMMY		80FF	80FF	80FF	80FF	0000
24	BEGIN ZZ		0	80FF	80FF	0	0000
25	END ZZ		0	80FF	80FF	0	0000
26	"IC" HOME CP	CBV3,	80FE	80FF	80FF	80FF	0000
27	PLACE ROLLER ON TUBE (CP 45 DEG)	CBV3,	8601	80FF	80FF	80FF	0000
28	CLEAN DRAIN	DRV3, EBV3,	D253	80FF	80FF	80FF	0000
29	DUMMY		80FF	80FF	80FF	80FF	0000

500 ↗

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FIG.10A2

518	520	522	524	526	528	530	532	534	536
SENSOR STATE	SENSOR MASK	MOTOR TEST	SM TEST	TOSM	TVALUE	TFUNC	END CTRL	BRAN CTRL	DEST
0	0	0	0x0000	0xFF	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x21	0x0000	0x0	0x0007	0x0000	0x0000
0	0	BF	0x0000	0x21	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x21	0x0000	0x0	0x0007	0x0000	0x0000
0	0	BE	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x23	0x0000	0x0	0x0007	0x0000	0x0000
0	0	BF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x24	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x00	0x0014	0x42	0x0000	0x0000	0x0000
0	0	FF	0x0000	0x25	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x26	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x27	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x28	0x0015	0x42	0x0000	0x0000	0x0000
0	0	3F	0x0000	0x28	0x0016	0x42	0x0000	0x0000	0x0000
0	0	3F	0x0000	0x28	0x0000	0x0	0x0007	0x0000	0x0000
0	0	3F	0x0000	0x28	0x0000	0x0	0x0000	0x0000	0x0000
0	0	FE	0x0000	0x29	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FE	0x0000	0x29	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x29	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FE	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x30	0x0000	0x0	0x0007	0x0000	0x0000
0	0	0	0x0000	0xFF	0x0000	0x0	0x0000	0x0080	0x0000
0	0	0	0x0000	0xFF	0x0000	0x0	0x0000	0x0000	0x0000
0	0	FF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	BF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	BF	0x0000	0x00	0x0000	0x0	0x0007	0x0000	0x0000
0	0	FF	0x0000	0x31	0x0000	0x0	0x0007	0x0000	0x0000

10A1

10B2

35/40

500

FIG. 10B1

STATE ORDER	STATE DESCRIPTION	ENERGIZED (VALUES ONLY)	EP	FIRST MOTOR	SECOND MOTOR	SP	SENSOR SELECT
30	"RV" RESET VALVES TO OFF (USED INSTEAD OF "RE" DURING "BD" IN HYPERTERMINAL)		80FF	80FF	80FF	80FF	0000
31	DUMMY		80FF	80FF	80FF	80FF	0000
32	"HS" STANDBY POSITION FOR CP AND SP	CBV3,	80FE	80FF	80FF	80FE	0000
33	PLACE ROLLER ON TUBE (CP AND SP 45 DEG)	CBV3,	8601	80FF	80FF	8601	0000
34	DUMMY		80FF	80FF	80FF	80FF	0000
35	"EB" END CONSTANT VELOCITY SP MOVE		80FF	80FF	80FF	80FF	0000
36	DUMMY		80FF	80FF	80FF	80FF	0000

10B2

500 ↘

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FIG.10B2

SENSOR STATE	SENSOR MASK	MOTOR TEST	SM TEST	TOSM	TVALUE	TFUNC	END CTRL	BRAN CTRL	DEST
0	0	FF	0X0000	0X00	0X0000	0X0	0X0007	0X0000	0X0000
0	0	FF	0X0000	0X30	0X0000	0X0	0X0007	0X0000	0X0000
0	0	FF	0X0000	0X00	0X0000	0X0	0X0007	0X0000	0X0000
0	0	BE	0X0000	0X00	0X0000	0X0	0X0007	0X0000	0X0000
0	0	FF	0X0000	0X21	0X0000	0X0	0X0007	0X0000	0X0000
0	0	FF	0X0000	0X34	0X0000	0X0	0X0007	0X0000	0X0000
0	0	FF	0X0000	0X34	0X0000	0X0	0X0007	0X0000	0X0000

10B1

600

STATE ORDER	STATE DESCRIPTION	DOR	DAND	SM	CM	CI	CO	RC
0	RESET IN GENERAL	0X00000000	0xFFFFFFFF	0X80FF	0X80FF	0X80FF	0X80FF	0X0000
1	START M1; START HC	0X00000000	0xFFFFFFFF	0X80FD	0X0000	0X80FF	0X80FF	0X0000
2	END HC	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
3	START HR	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
4	END HR	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
5	START US; BRANCH IF UPSTREAM NOT READY	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X00900	0X0000	0X0000
6	BRANCH IF BUFFER FULL	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
7	SIGNAL OK TO SEND RACK; WAIT FOR COMPLETE SIGNAL (READY)	0X00000010	0xFFFFFFFF	0X0000	0X0000	0X80FF	0X0000	0X0000
8	DELAY 200 MS	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
9	UNSIGNAL OK TO SEND RACK; FEED IN 2 SEC	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0900	0X0000	0X0000
10	END US	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X80FF	0X0000	0X0000
11	WAIT IF NO OTHER RACK	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
12	RUN RACK IN	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X0900	0X0900	0X0000
13	EXTRA SECOND TO MAKE FLUSH. READ RACK ID FOR TRANSMISSION	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X0900	0X0900	0X0000
14	STOP CONVEYOR; CHECK IF ROOM AT OUTPUT SIDE	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
15	MOVE RACK IN	0X00000000	0xFFFFFFFF	0X8040	0X0000	0X80FF	0X80FF	0X0000
16	GOT RACK	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
17	NO RACK	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
18	END M1; END U2	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
19	START MN; MOVE TO NEXT TUBE POSITION	0X00000000	0xFFFFFFFF	0X8000	0X0000	0X80FF	0X80FF	0X0000
20	COMPLETE THE MOVE AND GET TUBE NUMBER	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
21	STABILIZE BEFORE READING TUBE DETECTOR	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
22	STORE TUBE DETECTOR VALUE, BRANCH TO SCAN IF TUBE PRESENT	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
23	UNCONDITIONAL BRANCH TO ENDMN	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
24	SCAN BARCODE	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
25	END MN; SEND COMPLETION TO MC	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
26	START ER	0X00000000	0xFFFFFFFF	0X8041	0X0000	0X80FF	0X80FF	0X0000
27		0X00000000	0xFFFFFFFF	0X8004	0X0000	0X80FF	0X80FF	0X0000
28		0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X0900	0X0000
29		0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X0900	0X0000
30	END ER; SEND COMPLETION TO MC	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
31	BEGIN BC	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
32		0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
33	END BC	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
34	BEGIN CR; RUN INFEED CONVEYOR IN REVERSE	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X0100	0X80FF	0X0000
35	HOME SAMPLE CARRIER WHILE DISCHARGE RUNS	0X00000000	0xFFFFFFFF	0X80ED	0X80ED	0X80FF	0X0900	0X0000
36	MOVE SAMPLE LEVER TO EJECT POSITION	0X00000000	0xFFFFFFFF	0X8044	0X0000	0X80FF	0X0000	0X0000
37	HOME SAMPLE LEVER	0X00000000	0xFFFFFFFF	0X80FD	0X0000	0X80FF	0X0000	0X0000

11B1

11A2

600

SENSEL	STST	SMSK	MTST	SMTST	TOSM	TVAL	TFNC	ENDCTL	BRNCTL	DEST
0X0000	0X00	0X00	0X00	0X0000	0XFF	0X0000	0X00	0X0000	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0030	0X04	0X04	0XFF	0X0000	0	0X000A	0X42	0X0000	0X0101	12
0X0230	0X00	0X04	0XFF	0X0000	0	0X0000	0X00	0X0001	0X0101	12
0X0030	0X00	0X04	0XFF	0X0000	0	0X0000	0X00	0X0001	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X000B	0X42	0X0000	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X000C	0X42	0X0000	0X0000	0X0000
0X0030	0X04	0X04	0XFF	0X0000	0	0X0000	0X00	0X0006	0X0001	5
0X0040	0X1F	0X1F	0XFF	0X0000	0	0X000D	0X42	0X0001	0X0000	0X0000
0X0040	0X1F	0X00	0XFF	0X0000	0	0X000E	0X43	0X0007	0X0000	17
0X0040	0X00	0X1F	0X00	0X0000	0	0X000F	0X42	0X0006	0X0000	0X0000
0X0230	0X01	0X01	0XFF	0X0000	0	0X0000	0X00	0X0006	0X0001	17
0X0000	0X00	0XFF	0X0000	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0X00	0X0000	0X31	0X0010	0X43	0X0000	0X0101	18
0X0000	0X00	0X00	0XFF	0X0000	0X39	0X0011	0X42	0X0101	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0000	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X1F	0X00	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0012	0X42	0X0007	0X0000	0X0000
0X10A0	0X05	0X48	0X00	0X0000	0	0X0000	0X00	0X0202	0X0001	24
0X0000	0X00	0X00	0X0000	0X0000	0	0X0000	0X00	0X0000	0X0202	25
0X4000	0X00	0X1F	0X00	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0X32	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0XFF	0X0000	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0230	0X02	0X02	0X00	0X0000	0	0X0013	0X43	0X0007	0X0000	30
0X0000	0X00	0X00	0X0000	0X0000	0	0X0014	0X42	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0X33	0X0000	0X00	0X0007	0X0000	0X0000
0X4000	0X00	0X1F	0X00	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0X0000	0X0000	0X44	0X0015	0X42	0X0000	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0X0000	0X0000	0X30	0X0016	0X02	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0007	0X0000	0X0000

11A1

11B2

STATE ORDER	STATE DESCRIPTION	DOR	DAND	SM	CM	CI	CO	RC
38	RUN CARRIER OUTPUT BUFFER MOTOR UNTIL SENSOR NOT BLOCKED OR UNTIL TIME OUT	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X0000	0X0000
39	RUN CO A LITTLE LONGER	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X0000	0X0000
40	FND CR	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
41	BEGIN IC (IS CLEAR); IF OUTPUT SENSOR NOT BLOCKED BRANCH TO "IS CLEAR = TRUE"	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
42	RUN CARRIER OUTPUT BUFFER MOTOR UNTIL SENSOR NOT BLOCKED OR UNTIL TIME OUT. IF TIMEOUT BRANCH TO "IS CLEAR = FALSE"	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X0900	0X0000
43	RUN CO A LITTLE LONGER	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X0900	0X0000
44	IS CLEAR = TRUE; SEND 'T'; BRANCH TO END IS	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
45	IS CLEAR = FALSE; SEND 'F'	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
46	END IS	0X00000000	0xFFFFFFFF	0X80FF	0X0000	0X80FF	0X80FF	0X0000
47	BEGIN WR	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
48		0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
49	END WR	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
50	BEGIN ZZ	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000
51	END ZZ	0X00000000	0xFFFFFFFF	0X0000	0X0000	0X0000	0X0000	0X0000

11B2

SENSEL	STST	SMSK	MTST	SMTST	TOSM	TVAL	TFNC	ENDCTL	BRNCTL	DEST
0X0230	0X00	0X01	0X00	0X0000	0	0X0017	0X42	0X0001	0X0000	0X0000
0X0000	0X00	0X00	0X00	0X0000	0	0X0018	0X42	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0X00	0X0000	0X33	0X0000	0X00	0X0101	0X0000	0X0000
0X0230	0X00	0X01	0X00	0X0000	0X30	0X0000	0X00	0X0101	0X0001	44
0X0230	0X00	0X01	0X00	0X0000	0	0X0019	0X43	0X0001	0X0000	45
0X0000	0X00	0X00	0X00	0X0000	0	0X001A	0X42	0X0007	0X0000	0X0000
0X0000	0X00	0X00	0X00	0X0000	0X54	0X0000	0X00	0X0000	0X0101	46
0X0000	0X00	0X00	0X00	0X0000	0X46	0X0000	0X00	0X0101	0X0000	0X0000
0X0000	0X00	0X00	0X00	0X0000		0X0000	0X00	0X0101	0X0000	0X0000
0X0030	0X04	0X04	0XFF	0X0000	0	0X0000	0X00	0X0001	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0X52	0X001B	0X42	0X0000	0X0000	0X0000
0X0000	0X00	0X00	0XFF	0X0000	0	0X0000	0X00	0X0000	0X0000	0X0000
0X0000	0X00	0X00	0X00	0X0000	0XFF	0X0000	0X00	0X0000	0X0080	0X0000
0X0000	0X00	0X00	0X00	0X0000	0XFF	0X0000	0X00	0X0000	0X0000	0X0000

11B1